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THE

SEP 11 1929

MEDICAL JOURNAL OF AUSTRALIA



VOL. II.—16TH YEAR.

SYDNEY, SATURDAY, AUGUST 17, 1929.

No. 7.

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EDITORIAL NOTICES

HYDATID OF THE LUNG: AN ANALYSIS OF A SERIES OF SEVENTEEN CASES.¹

By S. C. FITZPATRICK, M.B., Ch.B. (Melbourne),
Hamilton, Victoria.

In spite of very definite advances in the method of their diagnosis and treatment, hydatid cysts of the lung still present important problems.

As a preliminary to a discussion of these problems, I present to you an analysis of seventeen cases of pulmonary hydatids which have occurred in my practice during the past seven years. In this series I have not included the many patients who gave a history of having at some time or other spat up "grape skins."

Incidence.

Eleven patients were male, six female. All lived in the country in close contact with sheep raising, the males either as graziers, station employees or shearers and the females as the wives of such. The age incidence shows one patient under twenty, five between twenty and thirty, five between thirty and forty, three between forty and fifty and two between fifty and sixty. No child younger than a school boy, aged thirteen years, was met with in the series. Nor can I find *post mortem* record of any child dying of pulmonary hydatid disease in this hospital during the period under review. The large cysts (above 12.5 centimetres or five inches in diameter) occurred in Cases I, VI, XI, XIV, XVII in patients aged respectively 44, 26, 13, 37, 38. The small cysts (under 7.5 centimetres or three inches in diameter) occurred in Cases VIII, IX, X, XII, XIII, XV in patients aged respectively 38, 37, 26, 24, 20, 59. In Case XII only was the lung cyst demonstrably secondary to abdominal hydatids. These facts at first seem to suggest that in the majority the infection had occurred after the patients reached adult life. But the rate of growth of lung cysts, fast as compared with liver cysts, is very variable. A five centimetre (two inch) cyst may be only one year old, but a 12.5 centimetre (five inch) cyst may be twenty years old. A radiogram of the chest of the patient (XIII) taken on September 5, 1927, shows a cyst 8.1 centimetres (three and a quarter inches) in diameter, which in a radiogram taken on April 12, 1929, is 9.6 centimetres (three and seven-eighths inches) in diameter, a growth of fifteen millimetres (five-eighths of an inch) in diameter in nineteen months.

Thirteen cysts were right-sided, three were left-sided and one multiple and bilateral. One here recorded as right-sided has since operation recurred on the left side.

Of the right-sided cysts eight were at the base, four were parabronchial and one in the middle third subpleural.

Of the left-sided cysts two were in the middle third, subpleural, and one at the base.

It is worthy of remark that the small cysts (Cases VIII, X, XII, XIII, XV, XVI) are almost all recorded as being parabronchial or close to the hilum. Since all cysts tend in growth towards the periphery, it is impossible to say where exactly the larger cysts arose. Dew in his recent book, "Hydatid Disease," states: "Two varieties of lung cyst exist, the commoner is situated in the peripheral or subpleural zone, the rarer is deep or parabronchial." This is a correct statement of clinical facts. Yet it is very probable that prior to rupture an equal number of all hydatid cysts arising within the lung itself is parabronchial or hilar in site. The parabronchial cyst is more likely to burst into the bronchus and be evacuated non-surgically, while the peripheral or subpleural is the more likely to persist, become large and come to the surgeon's notice. Dew's statement that "there is no doubt that many cases of natural cure following rupture into the bronchus occur and that these patients never seek hospital treatment" must surely refer chiefly to the hilar or parabronchial cyst. There are good reasons for inclining to the belief that the blood-borne embryos are sown as often centrally as they are peripherally and are probably under the same laws of distribution to the lung as any other blood-borne parasite or embolus.

Diagnosis.

It will be useful to consider under what diagnostic labels these patients were first treated or admitted to hospital.

Those patients, seven in number, whose cysts had ruptured into the bronchi before they first sought advice, all had a correct diagnosis made except patients V and IX.

Patient V was referred to me in 1923 for investigation on account of recurring hemoptyses and an area at the base of the right lung persistently dull to percussion and diagnosed as pleural effusion, but with the possibility of hydatid kept in mind. Radiography revealed a triangular-shaped radio-opaque area at the right base with no outline indicating a cyst and the right diaphragmatic dome at the normal height. The complement fixation test gave no response and the Casoni intradermal test was not available. The sputum was examined repeatedly for tubercle bacilli and on one occasion a few tubercle bacilli were reported as being present. Chiefly on this account the patient left the district and was treated as tuberculous for twelve months. After returning home, he coughed up a piece of laminated cyst wall and the diagnosis was reviewed.

This case exemplifies an unavoidable limitation of the radiological method of search which, while leaving the underlying hydatid masked, reveals only the pleural effusion. No help was gained from the blood reactions and the positive sputum report wrongly led to a discontinuance of the search.

It is interesting to recall that at the Australasian Medical Congress in Dunedin Sir Richard Stawell reported one case and Dr. Sewell two cases in which tubercle bacilli were found in the sputum and in which a pulmonary hydatid cyst was also proved present.

Patient IX was suspected of suffering from early pulmonary tuberculosis complicating pregnancy,

¹ Read at a meeting of the South-Western Subdivision of the Victorian Branch of the British Medical Association on April 20, 1929.

until a month later and a few weeks prior to confinement she coughed up definite hydatid cyst wall fragments. The symptoms and physical signs (especially that of hæmoptysis) tend to lead to the provisional diagnosis of pulmonary tuberculosis, unless and until other possibilities are considered and further search is made. Every patient with a ruptured cyst and 60% of those with unruptured cysts in this series had hæmoptysis at some period. For that reason hæmoptysis in any patient from this district at once suggests to me the possibility of hydatid as often as that of pulmonary tuberculosis. It may also be noted that those cysts which are peripheral, are less likely to cause bleeding until they become large and are more likely to cause pleurisy.

Those patients, ten in number, first seen when the cyst was unruptured, had a correct diagnosis made except patients III, VIII, XI, XV, XVII, who were treated respectively for pleurisy with effusion, pulmonary tuberculosis, pneumonia and pleurisy, ruptured œsophageal varix and pleurisy. These are typical diagnostic errors and in the absence of directing evidence from sputum, blood and X ray examinations such approximations are likely to be made when lung bases are involved. In Cases III, XI, XVII pleurisy was present; but to diagnose any condition simply as pleurisy is always insufficient. Pleurisy, like hæmoptysis, is a symptom demanding a search.

The cysts in Cases XII and XIV were found during routine radiography of the chest because of the presence of abdominal hydatids.

The cyst in Case XIII was found during the routine radioscopy of the chest prior to the giving of a barium meal in a dyspeptic.

Patient VI had such a chequered career that it is worth giving some details.

On September 13, 1922, I confined her. She suffered from eclampsia and had fourteen fits in eighteen hours. Fifteen months later, in December, 1923, she had acute right-sided pyelitis with blood and pus in the urine. She refused X ray examination and, unknown to me, went to the city where, on March 19, 1924, she was opened anteriorly and dorsally and a small hydatid cyst was removed from the right renal pouch. No X ray examination was made. Three months later she returned to me with a sharp hæmoptysis. Clinical examination revealed dulness and absent breath sounds in the lower half of the right lung. X ray examination revealed an opacity of the right lung which extended to the angle of the scapula and which provided the dull right lung base problem referred to previously. At operation I found both a large uninfected single cyst in the right lung and a suppurating cyst containing daughter cysts in the upper surface of the right lobe of the liver. Vaccillation on her part and refusal of sufficient investigation added greatly to this patient's sufferings.

Patient XII first consulted me in 1926 for jaundice. Palpation revealed the presence of multiple rounded tumours in the upper part of the abdomen. Routine radiography showed that a small right lung cyst was also present.

The condition of patient XV had been diagnosed as ruptured œsophageal varix associated with heart disease, until she came for further opinion because of repeated hæmoptysis. X ray examination revealed multiple thoracic hydatid cysts.

The interesting question at once arises as to the site of the primary cyst.

Harold Dew has emphasized that all multiple pulmonary cysts should be suspected of being metastatic and that, when they are found, special attention should be given to the action of the heart or, in other words, one should remember the possibility of a ruptured primary cardiac hydatid. A case of this type should be carefully reviewed from time to time in the light of the established evolution (or progressive stages) of the cardiac hydatid. An opinion as to prognosis is likely to be considerably influenced thereby.

Course and Termination.

When first seen by me, seven cysts were ruptured and ten were unruptured. Of the first group of seven, six had ruptured into a bronchus (Cases I, IV, V, VII, IX, X). Three patients were operated on and recovered (Cases I, V, VII). In two instances natural cure occurred (Cases IX, X). One patient was operated on and died (Case IV).

Of the seven ruptured cysts one had ruptured into the pleural cavity (Case II). This patient died.

Of the ten patients with unruptured cysts six were operated on and recovered (Cases III, VI, XI, XIV, XVI, XVII). One patient was operated on and died (Case VIII). One patient's cyst recently ruptured and cure is incomplete (Case XV). The cysts of two patients are still unruptured (Cases XII, XIII). In one instance a recurrence has taken place (Case XVI). (The recurring cyst is still unruptured.)

Analysis of Fatal Cases.

Case IV is that of a male, aged fifty-eight years. He had two years previously been operated upon elsewhere for a ruptured lung cyst; the wound had discharged ever since.

Prior to admission, he developed an acute right-sided bronchopneumonia (presumably insufflative) and his general condition was desperate. Under local anaesthesia a small plate of bone was removed with a small hole in the centre, giving free drainage to a foul empyema cavity. He died three days after admission.

This case typifies one of the most distressing sequelæ of the ruptured lung cyst. Prior to the onset of severe infective processes in the lung, a well designed thoracoplasty operation might have held out a prospect of cure.

Case II is that of a male, aged forty-five, who was admitted to hospital *in extremis* with great restlessness, cyanosis and a feeling of suffocation of rapid onset forty-eight hours previously. No operation was advised; he died within twenty-four hours of admission. Intrapleural rupture of a large hydatid cyst was found with a hydrothorax.

Case VIII is that of a female, aged thirty-eight, who was operated upon on July 18, 1924, for an unruptured cyst in the right middle lobe. She had had frequent hæmoptysis for six months and her general condition was bad. Pyopneumothorax ensued and death occurred on the eleventh day.

Pleural soiling is a common complication and conveyance of infection from a bronchial communication is a further complication which may be fraught with fatal results.

Treatment.

Of the ruptured cysts Cases II, IV, IX, X have already been dealt with. Cases I, V, VII remain.

Case I was that of a male, aged forty-four. X ray examination revealed the "cut across Dutch cheese" phenomenon mentioned by MacCormick. The pleuræ being fused, thoracotomy evacuation and drainage in one stage were done in 1921. Convalescence was uneventful. Two years later, pus and blood were spat up and the scar also opened and discharged for a short time. Since then no further trouble has followed.

Case V is that of a patient who was treated for about twelve months as tuberculous, as mentioned above, until cyst wall coughed up altered the diagnosis. The patient had lost much weight and was coughing up to about 360 cubic centimetres (twelve fluid ounces) of foul sputum daily. The incessant cough made his life miserable. During February, 1927, I induced artificial pneumothorax on the affected side and rapid relief followed, the sputum quickly lessened and he gained weight to normal. He has since returned to work on his farm.

Case VII is that of a patient who came to me having had a right lung cyst evacuated elsewhere some three years previously. He lost much weight, coughed frequently with very slight but offensive sputum. X ray examination revealed a thick-walled cavity with a small amount of fluid in it. In July, 1924, I carried out the first stage of an extrapleural thoracoplasty and in March, 1925, a further stage was done. Two months after the second operation the cavity healed completely. The patient resumed work a few months later.

Cases V and VII exemplify two valuable means of dealing with the problem of the persisting cavity following intrabronchial rupture.

Where no external opening has been made and the pleural surfaces have not fused, it is apparent that lung compression by artificial pneumothorax is possible and worthy of a trial and carries only small risk. Cure in such circumstances has recently been recorded in THE MEDICAL JOURNAL OF AUSTRALIA by Dr. Cotter Harvey, and Dew in his recent book states that the method had been suggested as acting in a similar way to that in chronic lung abscess or tuberculous cavities.

When fusion of the pleural surfaces has occurred, an extrapleural thoracoplasty properly planned and, when the general condition is poor, carried out under local anaesthesia, may be a life saving measure and completely curative for a most distressing sequela.

Such a measure at the proper time might have saved patient IV.

Of the unruptured cysts Case VIII has already been dealt with.

Cases III, VI, XI, XIV, XVI, XVII represent the simplest type of cyst to deal with, being basal and subpleural with adherent pleuræ in most. In all these thoracotomy, evacuation and drainage in one stage were carried out under general anaesthesia. The length of stay in hospital was 34, 66, 125, 34, 50, 19 days respectively. Omitting Case VI in which a coexisting liver cyst was also dealt with, and Case XI in which an acute lung infection existed before operation, the average length of stay in hospital was thirty-four days.

Patient XV with multiple and bilateral cysts, developed lobar pneumonia first in the left lung, then in the right. During her protracted convalescence she began two months ago to cough up large quantities of fluid and daughter cysts and shreds. Her radiograms before and after rupture are shown on the special plate.

It is too soon to say whether she will require any help to deal with the resultant cavities. It is worth discussing how soon or late one would offer the assistance of a lung compression in this woman.

In Cases XII, XIII and XVI the cysts are unruptured and the patients are present. Radiogram of patient XIII is shown on the special plate. They represent the unsolved problem of how to influence the relations, biochemical and biophysical, between the cyst and the lung so that its death will be brought about at an early stage. What can one do for these three strong young men except warn them of the possibilities until the enemy within their gates has grown to such a size as to be within comparatively safe reach by surgical means?

If anaphylaxis due to rupture of a primary lung cyst is a real danger, is it practicable to desensitize Patient XIII for a sufficiently long period to be of use? Has desensitization ever been carried out prior to operation?

Conclusion.

The further questions I suggest for your discussion are the following:

Does a study of the site of lung cysts in children tend to show that the embryos are sown as often centrally as they are peripherally?

Can the deeply placed parabronchial cyst be attacked *via* the bronchus?

Will "Lipiodol" injections show to any useful extent the relations of the cyst to the main bronchus?

Has bronchoscopy demonstrated any change visible within the main bronchus or chief divisions due to a growing hydatid involving its wall?

Can a local reaction be produced around the cyst by altering the immunological reactions of the blood?

Where multiple abdominal and thoracic cysts exist which should be first attacked?

Is it practicable to use the Casoni intradermal test in medical examination for life assurance when exposure to infection is common?

ACIDOSIS IN CHILDHOOD.¹

By T. G. OLIPHANT, M.B., Ch.B. (Melbourne),
Hamilton, Victoria.

ACIDOSIS is a condition in which the acid base balance of the blood is altered with a decrease in the amount of the fixed bases and an increase in the acid ions. The alkaline reserve of the blood is therefore altered. In health the balance between the bases and acids is fixed and the normal ratio is maintained and guarded in a definite manner. With ordinary diet the production of acid products is dealt with by the oxidation of harmful acid products to innocuous carbon dioxide and water, by

¹Read at a meeting of the South-Western Subdivision of the Victorian Branch of the British Medical Association on April 20, 1929.

elimination through the lungs and kidneys and by neutralization in the body fluids. Many conditions bring about an upset of this acid base balance. It is an accompanying factor in many diseases and sometimes the deciding factor. When its presence is due to the formation of ketone bodies, the condition is generally known as a ketosis.

The acidosis or ketosis of childhood is a question which is full of problems, and it may prove interesting to discuss some facts about the condition, some observations and some theories. It is now well recognized that the condition is common enough and in many of the states in which it occurs, of no untoward significance. On the other hand, there is a definite group of cases in which the presence of these ketone bodies in the blood and urine is accompanied by a train of symptoms which are always distressing and quite often dangerous and even fatal. It is not my object in this paper to discuss all the conditions producing ketosis in children, but to confine the remarks to that ketosis which is accompanied by vomiting and which may or may not be of a cyclic character.

Because the significance of acetone and diacetic acid in urine of a child very often means little or nothing, there has apparently until lately been little investigation into the cause of this condition. There is still very much more to be done. There is a large group of cases in which the ketosis is the striking feature, the condition requiring treatment, and to which as yet no adequate explanation of the cause has been advanced. All have seen these cases often enough to be familiar with the train of symptoms that accompany the condition.

The suddenness of onset of these attacks of vomiting is well known. These patients are quite often well one day and ill the next. Often they go to bed apparently well and the only indication that the child is not normal next morning may be found in the fact that he is sleepy, hard to rouse and, when finally awake, irritable. On the other hand an attack may come on slowly and be heralded by constipation (and this is common), a coated tongue, heavy breath, anorexia, undue breathlessness on exertion, giddiness, pallor, often abdominal pain of a transient nature and, lastly, vomiting. The vomiting quickly becomes the outstanding feature of the case. Often the first vomitus contains bile, in fact this is almost invariable, nothing is retained by the stomach as a rule. Later mucus which is often flecked with blood, is the sole constituent of the vomitus.

The temperature is raised, the pulse rate is generally high, the respirations are increased. The breath very often at once gives a clue to the condition—the unmistakable odour of acetone is readily detected. The child presents the picture of exhaustion, lying with half closed eyelids. If roused, it quickly relapses into a semi-comatose condition and this condition in serious cases deepens.

In the later stages twitchings of the facial and limb muscles are seen, the respirations increase,

slight cyanosis with circumoral pallor comes on, the abdomen often becomes distended and the child dies in a state of deep coma. All infections must be ruled out in the diagnosis. Tuberculous meningitis ought to be particularly mentioned, as in the early stages the vomiting and the drowsiness with the finding of acetone bodies in the urine may be a pitfall. Intussusception, of course, must be excluded, but generally speaking the picture is one that no other condition resembles, and the diagnosis is generally never difficult.

From a study of twenty cases there are one or two points that may be of interest, also possible conclusions as to the cause of this condition. Two most striking facts have been:

1. No case of severe vomiting with ketosis occurred in any but fair children.

2. It has always been possible to elicit a history of fat indigestion in these cases covering long periods and in the quiescent periods to see stools which are typical of fat indigestion.

The type of child likely to develop this condition can be forecasted fairly accurately from infancy. If an infant and particularly an artificially fed infant has difficulty in dealing with fat, this difficulty is generally carried on into the first five years of life. Putty-like, pale, large offensive motions, generally with only one bowel action a day, a tendency to vomit on the slightest increase in the amount of fat ingested are common factors. These children are pale, easily upset, thin, but mentally alert in this condition. They are intolerant of fat to a degree that is not normal. Fed on a well balanced diet such as a normal child will thrive on, they fail to respond and will prove a difficulty until the fat content of their diet is reduced. Five of these infants have been followed through the first four years of life and each of them developed an attack of severe vomiting with acetone bodies in the urine. On a rigid diet, a small amount of alkali and a mild rhubarb aperient further attacks were prevented. If, on the other hand, the child is allowed to go on with the same diet to which it has been accustomed, there will be a constant strain placed upon it to deal with what is to it an excess of fat. It will be living constantly with a very small margin of safety. Any gross indiscretion of diet or any physical strain will tip the balance to the wrong side and an attack of vomiting, accompanied by ketosis, will occur. Most of these conditions clear up, some of their own accord, some with the aid of mild laxatives, while some again are more severe. After they have cleared up, however, the child is still left with its low fat tolerance untreated and waiting for the next disturbance that will precipitate an attack. This state is then that of so-called cyclic vomiting. It can be lessened by or rather the attacks can be considerably lessened or even entirely abolished by appropriate treatment. It is not a distinct entity, but a phase of the same condition, brought about by fat indigestion.

Faulty metabolism of the fats therefore seems probably a factor in the production of this condition. As a result insufficiently broken down fatty acids are formed. Once this is so, acetone bodies are set free in the blood and most of the late symptoms and particularly the coma are explained by the excess of these bodies in the blood.

Morris and Graham⁽¹⁾ found that injections of acetone exceeding 0.8 gramme per kilogram body weight produced unconsciousness with occasional clonic convulsions in rabbits. They suggest that acetone has a double action: (i) a toxic effect similar to that of methyl alcohol and (ii) an acid effect on the acid base equilibrium.

That this increase in blood acetone or a condition of acetonæmia can be produced by diet alone has been shown by Brown and Graham.⁽²⁾ They fed epileptic children on a high fat, low carbohydrate and low protein diet and all these children exhibited a ketosis in a short time. In some cases the blood acetone increased to forty times its normal amount (the normal amount being 0.17 gramme per litre by the Van Slyke method). No diuretic effect from these large doses was noticed. Again, the increase of blood acetone was invariably followed by an increase in the urinary acetone. This would seem to point to the fact that the finding of acetone and diacetic acid in the urine is important and is of some guide as to the severity of the attack, especially if combined with other symptoms. Generally speaking this is so and with the diminution in the amount of urinary acetone and diacetic acid there is usually an improvement in the condition of the child. Graham and Brown have also shown that an increase in blood acetone is invariably accompanied by a fall in the alkaline reserve of the blood. This condition of a reduced alkaine reserve reduces the serum hydrogen ion content and therefore an acidosis or a shifting of the balance to the acid side. The first reserves of the blood in other words have been called up. Most observers state that increase of acetone does not lower blood sugar. There is not a unanimity of opinion that these vomiting attacks are accompanied by a hypoglycæmia. It is hard to see how attacks of this kind could occur in any condition other than a hypoglycæmic state of the blood. With increased blood sugar one would naturally argue that increased oxidation of fats would be accomplished. This would save the glycogen store in the liver.

If we presuppose a faulty fat metabolism and further an inherent or inherited inability from infancy to deal with fats properly, aggravated as it often will be by an indifferently balanced diet, we have a continual struggle on the part of the organism to deal effectively with these excessive fats. The carbohydrates ingested with the diet *plus* the glycogen reserve in the liver do their best and endeavour to metabolize these fats. But the body needs sugar for the supply of energy and muscle power. It therefore must use up a proportion of the ingested carbohydrate. The balance of unoxi-

dized fats left is too much for the glycogen reserve in the liver, hence a varying amount of improperly broken down fats passes into the blood stream. The amount may vary from day to day, the days of excess corresponding to the days of increased intake of fat or decreased intake of carbohydrate. The constant acetonæmia, be it ever so slight, has a toxic effect on the liver cells and body cells generally. This may produce a vicious circle. By the toxic spoiling of the liver cells and the muscles where glycogen is stored, these tissues are rendered unable to store a normal amount of glycogen, the liver is therefore working at a reduced reserve capacity. Anything which suddenly thrusts a huge demand on this reserve glycogen, may be the deciding factor in the onset of one of these cyclic attacks. A large excess of acetone bodies is flung into the blood and a ketonæmia follows.

Another point to be considered is the function of the adrenals. We know that adrenalin injected subcutaneously will cause glycosuria. Excess of adrenalin in the blood will quickly deplete the liver of its glycogen. This more quickly would render the ketonæmia acute. In these children we know their nervous system is easily unbalanced. Emotion such as would be caused by fright or exhaustion would have a stimulating effect on the adrenals. This is followed by a reaction. During this reactionary period the sympathetic influence is inhibited. The sympathetic supplies inhibitory fibres to the stomach musculature and also fibres which stimulate closure of the pylorus. Hence the lack of stimulation of these inhibitory fibres will produce irritability of the stomach, contents are regurgitated from the duodenum and vomiting results. One other point seems worthy of note.

If adrenal secretion is inhibitory to pancreatic secretion, we may, following the output of adrenalin, have in the reactionary period the increased output of insulin. In other words, a temporary hyperinsulinism.

Post-operative ketosis which is common in children, can reasonably be explained by a combination of adrenal stimulation through fright, together with preliminary starvation. These two factors would be quite sufficient to deplete the liver of its glycogen.

No work has been done on the sugar level of these children in their quiescent periods, nor has their blood acetone been investigated. Both these factors would be helpful.

Treatment.

It is of prime importance to begin treatment in all of these cases by thoroughly evacuating the bowels. Calomel of all drugs seems preeminently suitable. The fact seems assured that before success with other treatment can be obtained, the bowels must be thoroughly opened. It would be interesting to know why calomel is more suitable than other laxatives. Its action on the liver and gall bladder is only indirect. It increases bowel peristalsis and

this increased bowel peristalsis produces increased contractions of the gall bladder. This merely results in more rapid emptying of the gall bladder. If calomel is retained, it can be given in 0.03 gramme (half grain) doses each half hour until 0.18 gramme (three grains) has been given. If the child retains this, the bowels will be well opened and this is often quite enough to cure a number of patients. It is common enough to see a child desperately ill and after having had the bowels well opened with calomel, apparently normal next day. When vomiting is so severe that nothing can be retained by the stomach, resort should be had to washing out the bowel. This should be continued until the return fluid is clear and to obtain this one must often persevere for an hour or more. After a short rest a 5% glucose solution with bicarbonate of soda should be given in suitable amount according to the age. In desperate cases subcutaneous or intravenous injections are quicker. In young children the longitudinal sinus is the route to follow in intravenous therapy. Young children as a rule do not tolerate a stronger solution than 5% glucose. Brown and Graham in a series of cases investigated found that glucose administration quickly reduced blood and urine acetone and that by the addition of alkali the alkaline reserve of the blood came back to normal more quickly. Alkali by itself has less effect in reducing the blood and urine acetone, hence the frequent failure of this treatment alone in the past. It is important to recognize we have two aspects to consider. The ketone bodies by their acid products tend to alter the acid base balance and in addition they have a distinctly toxic effect on the body cells generally. If it were not for this, in a purely acid intoxication alkali treatment should be sufficient. Glucose, however, acts by preventing the formation of more ketone bodies and, if combined with alkali, by more quickly restoring the normal acid base balance.

The question of using "Insulin" has been raised in these conditions, but in one case in which it has been tried here, the result was most disappointing. It is difficult to understand how it could be of use *per se*, when we remember that the combustion of glucose is accelerated by its use. If we could be sure of running in sufficient glucose before "Insulin" was given, the rapid utilization of this glucose would be serviceable, but before the idea was entertained the essential thing would be to be satisfied that no condition of hypoglycæmia would result from the injection.

The treatment in the quiescent stage is of great importance. If it is correct in surmising that fat indigestion plays an important rôle in the production of this condition, the withdrawal of fats to a great extent from the diet is going to be of service. Clinically the two most toxic fat containing foods to children are egg yolk and chocolate.

Repeatedly the history is given of an attack being ushered in by excess of these two foodstuffs. It is wise to substitute skimmed milk for whole milk,

eliminate eggs entirely and to feed on a high protein and high carbohydrate diet.

Cameron⁽³⁾ and Osman⁽⁴⁾ have brought forward the great benefit of excess of sugar in the diet of these children. Much the same result can be obtained by reducing their fats and allowing the usual carbohydrate intake of a normal child. Barley sugar and boiled sweets are excellent means of supplying sugar. Fresh air, plenty of rest, avoidance of fatigue and excitement are of prime importance, for there can be no doubt that these children live at their top, so to speak. There is generally nothing in reserve. It is quite usual to find that they are prone to the infections of childhood and that they often stand them badly. Nearly all of them manifest definite glandular enlargement, commonly in those glands along the posterior border of the sterno-mastoid.

Their resistance to disease seems definitely lowered and in some the question of tuberculosis is raised. This cannot be lightly dismissed. It is thought that the glycogen reserve is bound up with the antitoxic property of the liver. The better the reserve of glycogen, the better does the liver act. Any interference with its glycogen storing capacity may therefore lead to lowered resistance.

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OBSTETRICAL OBSERVATIONS.¹

By NORMAN DALE, M.B., B.S. (Melbourne),
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I HOPE that all those present tonight will not be too severely critical on the subject matter of this paper, because only very short notice was given for its preparation.

I shall not attempt to dogmatize on any particular aspect of obstetrics, but wish to bring before you certain observations on various conditions.

Induction of Labour by Quinine.

The well known method of inducing labour by quinine sulphate, castor oil and pituitrin has been tried frequently and I have often been disappointed, even though the routine treatment has been repeated. After using quinine, one is very apt to be misled as regards fetal distress by the presence of meconium in the *liquor amnii*. Meconium may be present in the *liquor amnii* in an apparently normal labour and in such cases may be due to pressure

¹ Read at a meeting of the South-Western Subdivision of the Victorian Branch of the British Medical Association on April 20, 1929.

on the cord caused by an occult prolapse or to the cord being wound round the neck of the child. Whatever the cause, one is naturally inclined to hasten delivery. Whether quinine in repeated doses, say a total of three grammes (forty-five grains), has any injurious effect on the fœtus, I cannot say, but from experience of several cases I do not consider that this method should be persisted in if two attempts have failed to have the desired effect.

Prolapse of the Cord.

In the management of occipito-posterior positions it is very often necessary to seek the aid of forceps to effect delivery and especially so if anterior rotation fails to take place. Manual rotation of the head can usually be effected, but in performing the rotation a rather uncommon complication may arise. I refer to prolapse of the cord. This has happened to me in four instances, in each the head was lying in the cavity of the pelvis when rotation was performed. Manual replacement was effected in every instance and in all rapid delivery with forceps resulted in a living child being obtained.

In *placenta prævia*, lateral or marginal, the same complication may occur. In such a case, if the presentation be a vertex and the fœtus viable and the cord has not completely prolapsed it is possible to replace the cord manually and then very slowly to effect dilatation of the *os uteri* and when dilatation is complete, the fœtus can be slowly delivered with forceps. The possibility of a prolapse of the cord occurring in *placenta prævia* should always be borne in mind when the membranes are ruptured artificially.

Panhysterectomy in Early Sepsis.

The operation of panhysterectomy in cases of very early sepsis is certainly drastic, but under some circumstances is, I think, the correct procedure. My experience is limited to one case.

A *multipara* had apparently carried over full time by three weeks, quinine induction failed after three attempts and on the three hundred and sixth day the fetal movements ceased and the fetal heart could not be heard. Five days later it was decided to attempt induction by the rectal tube method, reinforced by small doses of pituitrin. This also failed to evoke contractions and when two days later the patient's temperature and pulse rate became elevated it was feared that sepsis had occurred. In consultation with the late Dr. R. O. Douglas it was decided to perform a panhysterectomy, this being done by Dr. Douglas five hours from the onset of symptoms. At the operation the uterus and broad ligaments were found to be pale and practically bloodless and there were areas of cellulitis all around the lower uterine segment. The interior of the uterus was subsequently found to be stained with meconium, the fœtus being dead and undergoing maceration. Apart from some sepsis of the abdominal incision the patient made an uneventful recovery.

Third Stage of Labour.

The conduct of the third stage of labour always requires patience and the more patient one is, the better the result. In a prolonged third stage the administration of pituitrin in 0.12 to 0.18 mil (two to three minim) doses has been recommended. I have tried this method and on two or three occasions have regretted it, because when the

ultimate manual removal of the placenta has been attempted, I have found that the *os uteri* has contracted firmly and has hindered the manipulation.

Tears of the Perineum.

A tear of the perineum may be of all grades of severity and it is in the severer grades that the obstetrician can keep the patient from the gynaecologist. I strongly advocate the use of deep interrupted catgut or chromicized gut sutures reinforced by silkworm gut and at the same time taking care that any tears of the mucous membrane are correctly sutured. If the silkworm gut sutures are placed so that the points of entry and exit of the needle are close to the torn edges and a wide sweep is made through the already drawn together muscles, then one has very little fear of an œdematous, unhealthy-looking perineum occurring in the puerperium.

Intracranial Hæmorrhage in the New Born.

Intracranial hæmorrhage in the new born, so well described by Holland, is occasionally met with, being sometimes caused by asphyxia, at others by dystocia. If the signs of such appear soon after delivery and lumbar puncture be performed and blood stained fluid be obtained and the puncture be repeated in three or four hours and no fluid be withdrawn, then I think the immediate prognosis is good. This procedure was carried out in three infants who are all alive and apparently normal at the present time.

Lacerations of the Cervix.

Some years ago I examined one hundred and fifty *primiparae* in the puerperium with the object of determining the percentage of lacerations of the cervix occurring in normal and in forceps deliveries. One hundred of these were normal deliveries, the remaining fifty were forceps deliveries. It was found that lacerations occurred in 74% of normal deliveries and 88% of forceps deliveries, the difference in frequency being possibly accounted for by the fact that in the instrumental deliveries the average age of the patient was higher, the weight of the child greater and the first stage longer. Most of the lacerations were slight and unilateral and bilateral tears occurred with almost equal frequency. Having regard to the large number of slight tears which probably heal up satisfactorily, I doubt whether it is necessary to inspect and repair the cervix after a normal or a forceps delivery, provided that the forceps have been applied when the *os* is fully distended.

OBSTETRICS AND THE BIBLE.¹

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WHEN I undertook to prepare a short paper on Biblical obstetrics, it seemed to my subconscious

¹ Read at a meeting of the Section of Medical History and Literature of the New South Wales Branch of the British Medical Association on June 6, 1929.

memory that there were many incidents recorded in the Old Testament which would serve as texts upon which to hang a discourse. I found upon closer application that there is really not very much to go on, but what there is, has an interest that may serve to illumine a few minutes of our time. The patriarchal age, when Abraham and his folk, save for the change due to the use of firearms, led the life of the Bedouin of the present day, was naturally an age of primitive emotions, needs and methods. Polygamy was usual and barrenness the supreme misfortune. The marital affairs of the patriarchs were concerned mainly with the requirements in the matter of heirs. The matrons of that age when faced with the empty cradle were accustomed to provide a substitute in the person of their lady's maids who to their credit be it said never failed to produce the required offspring. Sarah, the wife of Abraham, was the first recorded case of pregnancy occurring after the menopause. We are told that Abraham was 100 and Sarah 90 years old when Isaac was born. We cannot wonder that it was written that Abraham and Sarah laughed to themselves when they were told of their forthcoming good fortune. In spite of the advanced age of his parents, Isaac seems to have been a strong lad. His mother, too, lived to be 127 years of age. Isaac married at the age of forty and strangely enough Rebekah, his wife, was also threatened with barrenness. It was not until they had been twenty years married that Rebekah became pregnant. Her troubles are described in words which convey to the present day practitioner a strong air of verisimilitude:

And the children struggled together within her; and she said, If it be so, why am I thus?

Who has not been questioned in some such terms?

And she went to enquire of the Lord and the Lord said unto her, Two nations are in thy womb; and two manner of people shall be separated from thy bowels; and the one people shall be stronger than the other people; and the elder shall serve the younger.

And when her days to be delivered were fulfilled, behold, there were twins in her womb.

And the first came out red all over like an hairy garment; and they called his name Esau.

And after that came his brother out, and his hand took hold on Esau's heel; and his name was called Jacob; and Isaac was three score years old when she bore them.

And the boys grew and Esau was a cunning hunter, a man of the field; and Jacob was a plain man, dwelling in tents.

And Isaac loved Esau, because he did eat of his venison: but Rebekah loved Jacob.

There is a whole novel or scenario in that brief résumé.

The next obstetric novelty recorded is the birth of twins to Tamar, the daughter-in-law of Judah, the lady whose methods were open to a certain amount of criticism, even in those primitive days.

And it came to pass in the time of her travail, that, behold, twins were in her womb.

It would seem that this is the first record of diagnosis of multiple pregnancy possibly by abdominal palpation.

And it came to pass, when she travailed, that the one put out his hand and the midwife took and bound upon his hand a scarlet thread, saying, This came out first. And it came to pass as he drew back his hand that behold his brother came out and she said: How hast thou broken forth? this breach be upon thee: therefore his name was called Pharez. And afterwards came out his brother, that had the scarlet thread upon his hand: and his name was called Zarah.

It would seem that the midwife of those days was just the same old Gamp as we found, should I say, prior to the passage of the legislation regulating the practice and qualifications of midwives. The scarlet thread does not seem to have carried infection into the uterine cavity, at least it is not recorded.

The only previous mention of midwives is found in the passage relating to the birth of Benjamin.

And Rachael travailed, and she had hard labour.

And it came to pass, when she was in hard labour, that the midwife said unto her, Fear not; thou shalt have this son also.

And it came to pass, as her soul was in departing (for she died), that she called his name Ben-oni, but his father called him Benjamin.

Rachael must have been well on in years and is the prototype of those mothers who face death with courage, if only they may hand on the torch of life to their offspring.

In Ramah was there a voice heard, lamentation, and weeping, and great mourning, Rachael weeping for her children, and would not be comforted, because they are not.

Evidently she stands for the maternal type in Hebrew literature.

Obstetric practice even in these days was altogether in the hands of midwives. For we find a further mention of the activities when the children of Israel were sojourning to the land of Goshen.

And the king of Egypt spake to the Hebrew midwives, of which the name of the one was Shiphrah and the name of the other Puah:

And he said, When ye do the office of a midwife to the Hebrew women, and see them upon the stools, if it be a son, then ye shall kill him: but if it be a daughter, then she shall live.

But the midwives feared God, and did not as the King of Egypt commanded them, but saved the men children alive.

And the king of Egypt called for the midwives, and said unto them, Why have ye done this thing, and have saved the men children alive?

And the midwives said unto Pharaoh, Because the Hebrew women are not as the Egyptian women; for they are lively, and are delivered ere the midwives come in unto them.

Therefore God dealt well with the midwives: and the people multiplied, and waxed very mighty.

This Pharaoh was ignorant of Rodier's theories applied to the extermination of rabbits. The stools were an essential portion of the midwives' armamentarium; the mother being delivered in the squatting position. The stay of the Israelites in Egypt marked a definite advance in their progress. From primitive wanderers they became for three generations a settled people, compelled by environment and by the tyranny of the Pharaohs to many tasks and occupations which blistered their hands, but

widened their experience. Moses, educated at court and no doubt well acquainted with the laws and customs of the Egyptians, embodied this learning in his code of laws and regulations and we find in Mosaic law a definite attempt at sanitation on fairly rational lines, so much so that if we had no other evidence, it would in itself be enough to show that Egypt had some idea of surgical cleanliness and of public health and sanitation. After child-birth a woman was isolated for forty days if the child was a son and for eighty days if a daughter. Ceremonial bathing and offerings to the temple were made before she was considered clean and permitted once more to mix with her family. The laws of isolation of a woman while menstruating were very drastic, affecting not only herself but her clothing and anything she may have touched. Seven days elapsed after the termination of an ordinary menstruation period before the bath of purification and the offering in the temple completed her return to the normal. If she suffered menorrhagia or metorrhagia she remained unclean as long as the discharge continued and for seven days after it ceased. The same drastic isolation and washing of person and clothing *et cetera* were required in the case of any person, man or woman, who had an "issue" of any kind. These regulations were distinctly an advance in sanitation from the nomadic days of the patriarchs for we find that when Jacob was leaving Laban, relations were somewhat strained because of Jacob's habits in the matter of encouraging the propagation of speckled, spotted and ringstraked stock. I used to wonder what a ringstraked beast looked like, my childish mind conjuring up a sort of horned zebra. Be that as it may. Rachael evidently having acquired something of Jacob's characteristics, did a little bit of pilfering on her own account and stole Laban's gods. The wrathful Laban pursued and overtook Jacob and his train and reproached him. Jacob protested his innocence and invited Laban to search his tents and find his gods. The search came finally to Rachael's tent.

Now Rachael had taken the images, and put them in the camel's furniture, and sat upon them. And Laban searched all the tent, and found them not.

And she said to her father, Let it not displease my lord that I cannot rise up before thee; for the custom of women is upon me. And he searched, but found not the images.

A curious rite for the purification of the unclean, those, for example, who had touched a dead body, was the use of the water of separation. This was made of the ashes of a red heifer burnt *holus holus*, the priest throwing cedar and hyssop and scarlet into the burning pyre. The ashes were collected by a clean person and placed outside the camp in a clean place. When an unclean person required purification a portion of the ashes was taken and put into the water and the fluid was sprinkled by a clean person who dipped a hyssop branch into it and sprayed the person and premises of the unclean.

I am unable to say what the significance of the mixture of organic charcoal, bone dust and so forth

may be. As a disinfectant it leaves much to be desired, but as a symbol I have no doubt it produced much good in compelling isolation and washing which are paramount in the prevention of contagious and infectious disease.

There is quite an interesting chapter or two in *Leviticus* dealing with the differential diagnosis of "leprosy and scall," "the leprosy of a garment and of a house and for a rising, and for a scab, and for a bright spot, to teach when it is unclean and when it is clean." The precautions carried out in the case of infected dwellings, cleaning out the dust *et cetera* and plastering would suggest that the early Egyptians had much the same observation that led in later years to the suspicion falling upon the bed bug as a carrier of leprosy. This hardly comes under the heading of obstetrics, but I feel like the well-known Welsh preacher whose discourse was divided into three parts: Firstly, he gave out his text, secondly, he got away from it and thirdly, he never got back to it.

Without invading the realm of Egyptology and comparative obstetrics, I have endeavoured to point to a few evidences which suggest the state of civilization reached by that early people whose recorded narrative has so powerful an influence upon the whole world to the present day.

OBSTETRICAL CUSTOMS AMONG SAVAGE AND BARBAROUS PEOPLES.¹

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I wish first of all to thank the members of this Section for the honour they have paid me in inviting me to read a paper tonight. I hope that the remarks to follow may prove of interest to you.

In the lowest stages of civilization the observances connected with pregnancy and childbirth are relatively simple, but as civilization advances various ceremonies are found. These rites may be considered under the following heads: (i) The condition of tabu entailed by gestation and birth, (ii) the dangers from evil spirits and witchcraft, (iii) the attempt to secure an easy delivery, (iv) the attempt to secure good fortune for the child.

The Condition of Tabu.

A condition of tabu is conceived of as a material infection communicated by contact with a person or with anything used by her or even by relations of kinship or neighbourhood. The processes of generation and reproduction, mysterious even to us, are in the lower stages of culture the object of emotions that we can hardly understand. Blood, too, is regarded with horror. The slaughter even of an enemy is enough to place a man under tabu; hence warriors returning from even a successful raid are

¹ Read at a meeting of the Section of Medical History and Literature of the New South Wales Branch of the British Medical Association on June 6, 1929.

required to be purified. But of all the blood that inspires horror, that which proceeds from the female organs of sex is the most effective, perhaps because its normal cause is unknown. A menstruating woman is set apart, her touch defiles, her ordinary ministrations to husband and household are suspended. It is therefore not wonderful that pregnancy and childbirth are conditions of tabu and that others than the woman, especially the husband, are involved.

The Couvade or "Man-Childbed."

The custom of the couvade is very widespread and has been the subject of innumerable jests at the expense of the savage husband. According to this custom even before the child is born, the father abstains for a time from certain kinds of animal food. The woman works as usual up to a few hours before the birth of the child. At last she retires alone or accompanied only by some other women to the forest, where she ties up in her hammock and then the child is born. Then in a few hours, often less than a day, the woman who like all women living in a very unartificial condition, suffers but little, gets up and resumes her ordinary work. In any case, no sooner is the child born than the father takes to his hammock and, abstaining from every sort of work, from meat and all other food, except weak gruel of cassava meal, from smoking, from washing himself and above all from touching weapons of any sort, is nursed and cared for by all the women of the place. The interesting father may not scratch himself with his finger nails, but he may use for this purpose a splinter, specially provided, from the mid-rib of a cokerite palm. This condition continues for many days and sometimes weeks. This custom apparently is the asserting of the father's relation to the child and the mode by which he claimed it for his stock rather than the mother's.

Delivery in Seclusion.

It follows from the condition of tabu imposed on a parturient that childbirth must always take place in seclusion. Among many peoples, where the climate permits, the event takes place out of doors in the open air.

The Herero woman in South Africa is delivered behind her mother's hut and after the birth she is placed in a small hut, where she remains until the navel-string drops from the child.

In British Columbia the native woman retires to the woods, unless it be winter or the retirement to the woods be inconvenient for any reason, in which case she is delivered behind a screen of reed-mats in the general dwelling which is of considerable size. Among some of the tribes of New South Wales it is said that the spot to which the parturient retires, is fixed upon by the elders of the band.

In tropical countries delivery frequently takes place in the forest; in the Babar Archipelago on the seashore. The Indians of the Rio de la Plata are delivered on the shore of a lagoon or river, where immediately afterwards they wash themselves and the infant.

Where parturition does not take place in the open air, a special hut is commonly provided for the purpose. In Japan this hut used to be a mere shed without a door. Where a separate dwelling is provided for the menstruant woman, as is often the case, the parturient retires thither to be delivered; the other occupants also being under tabu, no harm



FIGURE I.

This illustrates the sitting position adopted by some negroes. The patient is supported by a friend.

can be inflicted on them by her presence. This is the practice of certain tribes in the south of India. In some parts of Russia the peasant woman is placed for delivery in a barn or a hut at a distance from the house.

The Votjak woman gives birth in the family dwelling, but behind a curtain, for it would be a bad omen for anyone but the midwife to see the birth. This clearly means that it is not a desire for privacy on the part of the patient that leads to the seclusion so much as a ban on the part of the other members of the household.

Where the seclusion cannot be carried out by delivery in the open air away from the community or where by custom or special circumstances de-



FIGURE II.

This illustrates the standing position adopted by some other tribes.

livery takes place in the hut usually occupied, the tabu is none the less strict.

In the west of Victoria the Australian woman remains in her husband's shelter, but he is required to live elsewhere, the neighbouring shelters are temporarily deserted and every one is sent away from the vicinity except two married women who stay with her. Similar customs prevail in tribes in the west coast of India and the Philippine Islands and

among some of the Indian tribes of Brazil. In some places everything is taken out of the house, even the pots, pans, bows and arrows until the next day. All these objects would be affected by the uncleanness of childbirth, if allowed to remain and probably would have to be destroyed, as is done among



FIGURE III.
The half-suspended attitude adopted by inhabitants of the Island of Ceram.

some of the tribes of New South Wales, together with every vessel used by the parturient during her seclusion. So contagious is the tabu that, if the men do not avoid the neighbourhood of the hut, they, it is widely believed, will be unlucky in their own occupations, as in the New Hebrides where the yams they cultivate will be destroyed.

Absence of the Father at Birth.

As a rule the husband in common with all other men is required to be absent on the occasion of childbirth. The reason of this has been supposed to be the condition of tabu under which the parturient woman lies. But this is not always the

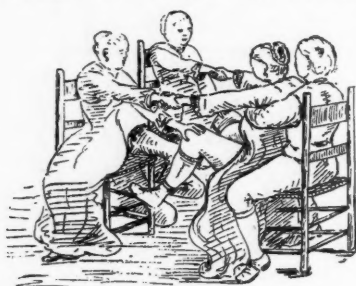


FIGURE IV.
In this position the parturient is half sitting on the husband's knees. There are two trusty friends who each hold one hand of the parturient and push with the other on the parturient's knees, while the accoucheur kneels between them and receives the child. This position is said to be slightly wearisome to the husband in a case of delayed labour.

rule. Among the Opatas of Mexico a parturient is attended by her nearest relatives; but so little seclusion is deemed necessary that men and even children may be present.

In the Loyalty Islands the act of birth is a spectacle that everybody—men, women and children—flock to enjoy, except the husband who alone must be absent. During the whole of the woman's subsequent seclusion which lasts until the child is big enough to crawl, her husband never pays her a visit, though he occasionally sends her food. He is under a special ban.

In the wild tribes of the Malay Peninsula the husband has to be present and act as midwife, while all other men must keep away. Among the Yaroinga of Queensland the parturient is attended by an old woman as midwife, but the husband is at liberty to be present and witness the process of delivery, contrary to the practice of the neighbouring Kalkadoon who allow only a very old man or two to be present.

The active assistance of the husband is required in the Andaman Islands and the Babar Archipelago. In the Marquesas he is not only at hand, but must have conjugal relations with his wife almost immediately after the birth when she goes to bathe. It may be that the husband's enforced absence is to be regarded as a relic of earlier social conditions when the wife dwelt at her mother's house and descent was counted only through women. In such a case the identity of the father of the child would be of small importance and might even be unknown and the occurrence would be one in which he had small concern. This view is supported by the frequent if not ordinary presence and assistance of the parturient woman's mother, when alive and within reach. It is further supported by the custom of sundry African and Indian peoples whereby a woman, particularly at her first confinement, returns to her mother's home and is there delivered and remains in seclusion for a ritual period, apart from her husband and unvisited by him. Among one of these peoples at least (the Basuto) the first child belongs to and remains with the mother's parents.

Attempt to Obtain Easy Delivery.

To evil spirits are ascribed difficulty of parturition, the death of the parturient or of the child, the infliction of disease on the child, the carrying off of a child or its exchange.

On the Island of Kythnos in the Greek Archipelago all the mirrors are covered during labour, no one is allowed to enter the birth chamber after sundown and during the first three nights to turn away the evil eye and conciliate the Fates, all the mother's trinkets, rings *et cetera* are laid out on the bed with a pot of jam.

Against the agony thus inflicted and the disasters which may ensue, various countervailing means are employed. It is not an unreasonable conjecture that this is the reason why delivery is often required among savage and barbarous peoples to be affected in the open air. In the Philippines the husband strips stark naked and stands on guard either inside the house or on the roof, flourishing his sword incessantly to drive away the evil spirits until the child is born.

The recitation of charms is common. Offerings and prayers are made to benevolent gods and spirits, wherever the development of religious belief sanctions them and these are sometimes combined with a banning of the malevolent spirits.

In extreme cases obscene performances take place by a band of young men in the presence of the patient, when it is believed that the evil spirits for very shame take to flight.

A common spell against difficult labour is the opening of all doors and cupboards, the untying of all knots, the loosening of garments or even stripping of all present. The Arunta husband in Central Australia, though not present at the birth, takes off all his personal adornments and empties his wallet of all knick-knacks on the ground and his hair girdle is taken to the woman and tied tightly round her body just under her breast, apparently with the idea of driving out the child. If this be ineffectual, the husband walks slowly up and down, quite unadorned, in front of the women's camp,



FIGURE V.

The Squatting Position, the Parturient Supported by the Faithful Friend. The accoucheur blows warm vapours on the patient's vulva, thus softening the parts and overcoming any rigidity of the maternal soft parts.

where his wife lies about fifty yards away, with a view of inducing the child to follow him. In Malta a specimen of the dried flower known as the rose of Jericho is procured and put into water in the parturient's chamber. It is believed that when it opens, the child will be born. Analogous to this is the custom of boiling peas to bring about the birth.

Then again care must be taken not to do certain acts in the house. Nobody for instance in Bavaria may step over a broom—a prohibition current also in India. Nor may anything be lent out of the house. Aultery among many peoples is held to be a cause retarding delivery. In such cases of difficult labour the unhappy woman is closely questioned and made to confess. It is believed that, until she does so, the child cannot be born.

Attempts to Secure Good Fortune for the Child.

The Afterbirth.

A point of great importance is the disposal of the afterbirth and cord and of the caul when there is one. The Swahili enter the placenta on the spot where the delivery takes place, in order that the child through a mystic power, even after it has

grown up, may feel itself continually drawn to its parents' house. The cord is worn round the child's neck for some years and afterwards buried in the same place. By this proceeding it is believed that the child's growth is promoted.

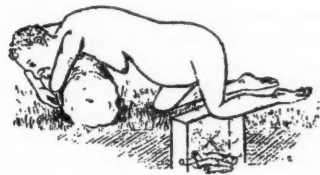


FIGURE VI.

Knee-Chest Position over a Vapour Bath, Employed in Cases of Laborious Labour to Soften the Parts.

The Australian natives on the Pennefather River in Queensland hold that the "*cho-i*" or soul of the child remains in the afterbirth. The latter as soon as it comes away from the mother, is buried in the sand and a number of twigs is stuck in the ground to mark the place and bound together at the top in a conical form. It is believed that Anjea—a supernatural being whose business is the making of babies out of mud and their insertion in the womb—recognizes the spot, takes out the *cho-i*, carries it to one of his haunts, keeps it for years, until it is wanted for the completion of another baby. When he has formed a baby he puts into it, if a boy, a portion of the father's *cho-i* or if a girl, a portion of the father's sister's *cho-i*. He takes an opportunity of secretly placing the baby, thus completed, into the womb of the mother for whom it is intended. The Toba-bataks call the placenta the younger brother

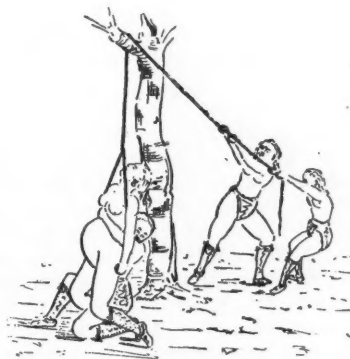


FIGURE VII.

The Partially Suspended Attitude for Difficult Labour. The patient kneels and during a pain is hauled up by two lusty women while the third exerts fundal pressure. The manœuvre is said to be always followed sooner or later by the birth of the child. The results to the mother are not always happy.

of the child. They hold that every man has seven souls. One of these abides with the placenta which is buried, but can leave it to warn the child to whom it belongs or if he be acting rightly, to encourage him and thus plays the part of conscience.

The Javanese believe that the souls of their forefathers are housed in crocodiles. In the interior of the island, after the birth of a child, the women are accustomed to take the placenta, surrounded with fruits and flowers and lighted by little lamps in the dusk of the evening to the river and commit it to the waters as a gift for the crocodiles or rather by way of dedication to the forefathers whose souls inhabit them.

In Europe, on the other hand, what is most dreaded is that the afterbirth and cord should be eaten by an animal or exposed to the evil offices of fairies or sorcerers. In Spain, for example, if the least part of the placenta were eaten by an animal, the infant would be possessed of all the bad qualities of the animal in question, for the placenta and cord are regarded as being an essential part of the child. Moved by the same belief, the Kwakiutl of British Columbia take precisely the opposite course of exposing a boy's placenta where it will be eaten by the ravens, he will then have the gift of foreseeing the future.

Similar superstitions attach to the caul. A child born with a caul is endowed with extraordinary powers. Among the negroes of the West Indies



FIGURE VIII.
The Half Reclining Position and Manual Expression of the Placenta.

and North America and among the Dutch he can see ghosts. In England it is believed he cannot be drowned, perhaps because, as the Icelanders believe, the caul contains the child's guardian spirit or a part of its soul. The Icelandic midwife therefore is careful not to injure the caul. She buries it beneath the threshold over which the mother has to pass. It is probable that this proceeding is adopted in order that in the event of the child's death, the soul may reenter the mother and so the child may be born again—a belief frequently implicit and sometimes more than implicit in the like burial of dead and stillborn babes. However that may be, the caul is everywhere prized.

If the mother die in childbirth, savage peoples as a rule bury the child with her on account of the difficulty in rearing it or sometimes because they fear that she will not rest without it.

Chinese Customs.

The customs which are observed in China in connexion with childbirth differ widely in the various portions of the Empire. Many of these are significant of religious preconceptions, though modern explanations tend to emphasize the physical benefits which are supposed to accrue from these observances.

It should be remembered that the elaborate preparations which are made previous to birth, are intended to secure not only a happy issue to the anxious crisis—the safety of the mother and child—but their first and primary purpose is to prevent the awful contingency of death before delivery which would involve the mother in endless torments in the "Lake of Blood" which is the special depart-



FIGURE IX.
The Expulsion of the Placenta with the Aid of a Band Compressing the Abdomen.

ment of the underworld reserved for such unfortunates. From this point of view, therefore, the anxious care which surrounds the birth chamber may be said to be replete with religious significance.

A month previous to the expected date of birth the bride's mother or other near relative on that side of the house is expected to arrive with the accustomed gifts and perform the office of "undoing the fastening." The gifts include eatables, clothing for the expected arrival and tonics for the mother with a view of producing a quiet and successful parturition.

Charms from the neighbouring temple are sometimes procured to fasten on the baby's body as soon as born, for the event is supposed to be attended by hosts of spirits with malicious designs upon both mother and child.



FIGURE X.
Delivery by the aid of Instruments according to Japanese Methods.

As soon as the birth pangs begin to be felt, the female members of the family hasten to light candles and burn incense before the ancestral tablets in the little shrine over the main partition of the entrance hall and also in front of the "god of health" and the "kitchen god," offering extempore prayers, as no settled form is provided for the occasion and taking vows of future deeds of merit in the event of a favourable response and all with a view to

securing the assistance of the "birth speeding goddess" who is supposed to have the ordering of such affairs.

The midwife is at the same time summoned together with other assistants whose office it is to "clasp the waist" of the expectant mother. The latter is maintained in a sitting posture throughout the ordeal and is encouraged to drink a brew of dried fruit and thin gruel to sustain her, together



FIGURE XI.

The Operation of Cæsarean Section in Native Africa. The patient is given some intoxicating liquor and then firmly held down. This patient made an uninterrupted recovery.

with certain medical potions which are held to be very efficacious. Red candles are lighted in the chamber, as for a wedding and all words of ill omen are carefully omitted, the idea being the ostentation of a cheerful confidence and the avoidance of any suggestion of fear. As soon as the child is born, a messenger is sent to the nearest lake or pond to procure a small quantity of water, which is then heated for the baby's first bath. This is to insure that when he grows up he will be an expert fisherman. The child's body is then rubbed dry with alum, a pad of fresh cotton wool is placed over the navel and the umbilical cord which is cut at about a foot's length from the body, is rolled up tightly and bound.

The infant's clothes are then put on, in shape like the robes of a Buddhist monk, probably with a view of deceiving the malignant spirits. The male and female "guardians of the bed" are then respectfully worshipped. The placenta and membranes are placed in a bottle, hermetically sealed, put under the bedstead or sometimes disposed of for the manufacture of pills.

No food is given to the infant for the first twenty-four hours, but at the end of this period three teaspoonfuls of a liquid compounded of materials representing the five flavours—salt, sour, bitter, pungent, sweet—are administered before the first drop of milk is allowed. The infant is not supposed to sample its own mother's milk until it has first been supplied from another household, where a baby of the opposite sex is being reared. A bowlful of this milk is obtained and artificially warmed before being given to the child.

Burma.

In Burma the customs connected with pregnancy are not common. The Kachin women must not

eat honey or porcupine flesh at that time, as they cause miscarriage. Among the Shans husbands should not drive pigs, carry the dead, dig or fill in holes or mock at others.

Kachin customs explain the reason for the observances at birth. Normal births are under the protection of the house guardians. These house guardians are images of Buddha made out of the bones of respected relatives who have been cremated, ground to powder and mixed with wood oil. They pray to these images as house guardians. Abnormal births occur when the jungle nats or spirits have driven out the house guardians, a situation which the exorcist ascertains by divination from bamboos. Therefore by way of propitiation at all births two pots of beer are prepared, one for the general company and one named after the child immediately on its appearance and drunk in its honour. So also is it necessary to notify the fact of the birth to the spirits by sacrifices.

After a normal birth the mother remains at home out of the way of the spirits for three days and on the fourth she is formally protected from the spirits who desire to carry off the child by throwing a spear at a spring. At abnormal births the spirits are appeased by sacrifices and driven away by noise and the burning of foul smelling things. The Red Karens improve on the beer drinking of the Kachins by turning their birth feasts into orgies of meat and drink and teaching the infant to drink liquor while still at the breast. Among some twins and triplets, being spiritually dangerous, are always killed.

Spirit scaring, combined with spirit protection under cover of driving out the evil humours—an idea acquired from Indian medicine of no very early date—is no doubt responsible for the extraordinarily cruel customs of the modern Burman.



FIGURE XII.

Accouchement to Music, the Jazz Band Artists, Prototypes of which may be heard in most modern Flats in the form of Gramophones or Wireless.

Immediately after the birth of the child the mother is rubbed over with turmeric and then heated with fire, blankets and hot bricks for seven days. She is then steamed over a jar of boiling water and finally has a cold bath. All this time she perpetually drinks a secret concoction prepared by midwives and smells at samonnet balls. Many articles of food are forbidden to the mother and even to the husband for from seven days to a month.

Among the Red Karens only the father may act as a midwife and he may not speak to anyone after the birth of his child.

Among the White Karens no one may leave the village after a birth until the umbilical cord is cut, this event being announced by bursting a bamboo by heating. This custom is said to be extended to the birth of domestic animals. No stranger may enter the house of a woman during her confinement. The Red Karens hang up all the umbilical cords of the village in sealed bamboo receptacles on a selected tree. The Shans have a custom of bathing male infants in a bath containing articles of value.

Cambodia.

In Cambodia which is situated between Siam and Cochin-China, births take place with the help of matrons. In cases of difficult labour a special potion is administered, betel and prepared betel quids and fragrant joss sticks are offered to the "god of medicine," after which the midwife recites mantras. If a woman dies without being delivered during seventh, eighth or ninth months of pregnancy this is believed to be due to the vengeance of the evil spirits; she and her foetus become dreaded ghosts. When a miscarriage takes place, the sorcerer is hurriedly called. He puts the foetus in an earthenware jar and, armed with a sword in his right hand with which he threatens the jar in order to prevent the evil spirit of the foetus from coming out, goes to the nearest stream, pronounces imprecations, breaks the jar with a blow of the sword and leaves everything in the water.

Usually, however, the sorcerer makes a pretence of this ceremony, hides the foetus which is supposed to be animated by a spirit as intelligent as it is powerful, roasts it over a fire isolated by seven cotton threads stretched round the hearth, coats it with soot and varnish and sews it into a little bag which he will always carry with him. Henceforward he will succeed in all his enterprises and in cases of danger his "son of the spirit" (the name given to the foetus prepared in this way), who considers him now as a father, saves his adoptive father by his warnings. The adoptive father is obliged merely to give a few grains of rice at each meal to the spirit who otherwise would take flight, thinking himself badly treated. This belief has such a strong hold on the mind of the Cambodians, that sometimes, we are told, sorcerers or simply bold men come three days after a burial, to the grave of a woman who has died with child, to demand from her and take the foetus which is still in her womb, in order to make a "son of the spirit" of it by means of the above mentioned ceremony.

Faith in the supernatural power of the foetus led formerly and apparently still leads to unnatural acts. The power of the foetus is specially great when it is the first child of a couple married for the first time. In order to get possession of such a foetus, the husband used to ask his wife, as if in jest, about the fifth or sixth month of pregnancy

for the possession of the future child. If the woman entered into the joke and replied without thinking, "It is yours," the husband would lead the unfortunate woman to a secluded spot and kill her in order to get the foetus which when cooked and blackened as by the sorcerer, rendered him henceforward invulnerable and successful in his smallest undertakings. This detestable practice must have been fairly widespread, for, even up to recent times, in a case of first pregnancy the parents of the woman with whom as a rule the young couple live, anxiously and constantly watch the shortest absence of the future mother.

The confinement takes place with the help of expert matrons who employ empirical manoeuvres, accompanied by the recitation of mantras and by sacrifices. The vigorous constitution of the Cambodian mother does the rest. The umbilical cord is not cut until after the issue of the placenta. The child is immediately washed and wrapped in swaddling clothes. The mother is placed on a camp bed, bathed in warm water, a warm oval stone is placed on her abdomen and she is laid on the camp bed under which a fire is kept burning for the space of from nine to thirty days. The wood with which the fire is fed differs according as the child is first born or not. A cotton thread, blessed by a spiritual preceptor or sorcerer, surrounds the room to preserve it from evil spirits. The mother suckles the child until the age of three or four, not without stuffing it at the same time with rice and bananas which is a cause of the enormous abdomen which marks all Indo-Chinese children.

The birth of twins is considered unlucky, as also is that of albinos, dwarfs and deformed infants. These unfortunate children, except when the offspring of bakus (direct descendants of ancient Brahmins), become from their very birth lifelong slaves of the king.

Acknowledgement.

I am indebted to the "Encyclopædia of Religion and Ethics," edited by James Hastings, for most of the information in this paper and for the illustrations to "*La pratique des Accouchements chez les Peuples Primatifs*," by Engleman.

THE BACTERIOLOGY, CYTOLOGY AND BIOCHEMISTRY OF ACUTE CEREBRO-SPINAL MENINGITIS IN THE HOSPITAL FOR SICK CHILDREN, BRISBANE.¹

By J. V. DUHIG, M.B. (Sydney),

Director of the Pathological Laboratory, Hospital for Sick Children, Brisbane.

SINCE October, 1925, samples of cerebro-spinal fluid from thirty-four patients were submitted to laboratory examination. The sex incidence and frequency of the causal organism are given in Table I.

¹ Read at a meeting of the Section of Medicine of the Queensland Branch of the British Medical Association on May 13, 1929.

ILLUSTRATIONS TO THE ARTICLE BY DR. S. C. FITZPATRICK.

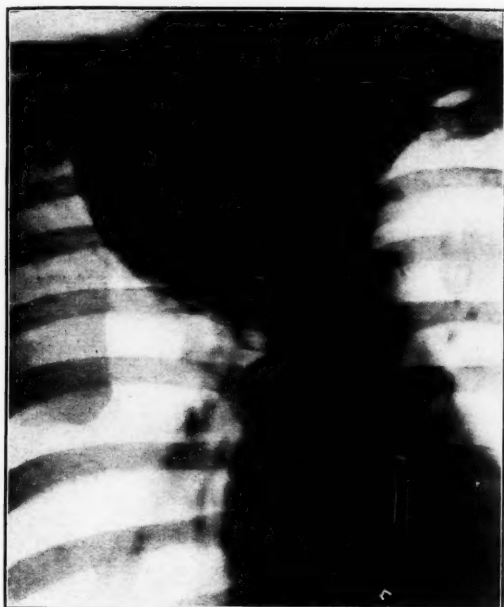


FIGURE I.
Case of Apical Hydatid Causing Pressure on Nerves.

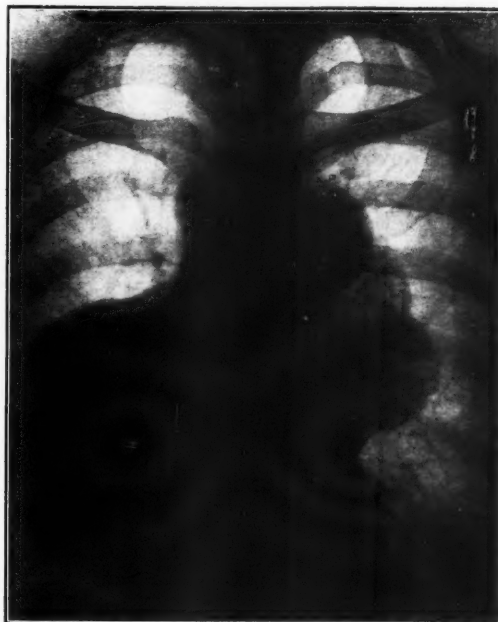


FIGURE II.
Case XV. Showing Multiple and Bilateral Thoracic Hydatids Before Rupture.

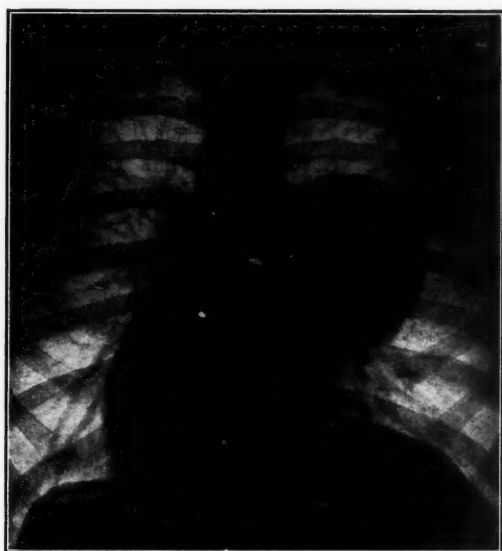


FIGURE III.
Case XIII. A Typical Example of an Unruptured Parabrachial Pulmonary Hydatid Cyst.

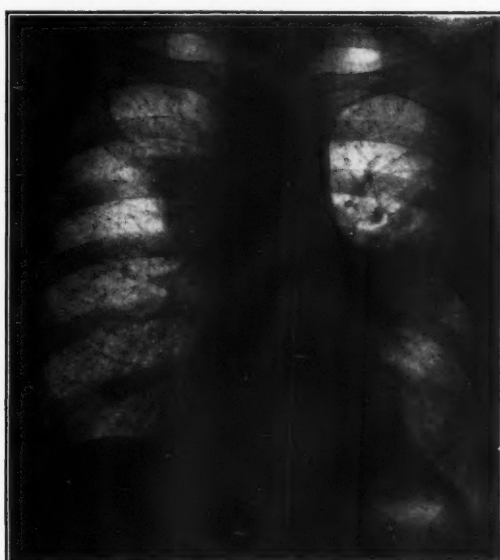


FIGURE IV.
Case XV. Two Months after Rupture into the Bronchi.

ILLUSTRATIONS TO THE ARTICLE BY DR. J. M. ALCORN AND DR. M. O'REILLY.

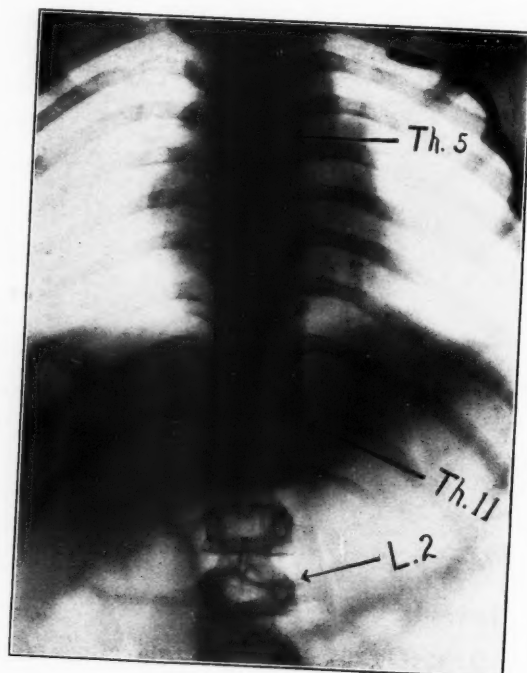


FIGURE I.
Antero-Posterior View of Vertebrae.



FIGURE II.
Lateral View of Vertebrae.

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TABLE I.

Causal Organism.	Males	Females.	Total.	Percentage of Total.
<i>Neisseria meningitidis</i> (meningococcus)	7	4	11	32
<i>Neisseria catarrhalis</i> (<i>Micrococcus catarrhalis</i>)	2	0	2	6
<i>Streptococcus pyogenes</i> (streptococcus)	1	1	2	6
<i>Streptococcus pneumoniae</i> (pneumococcus)	3	0	3	9
<i>Staphylococcus aureus</i>	1	0	1	3
<i>Haemophilus influenzae</i> (<i>Bacillus influenzae</i>)	6	3	9	26
<i>Mycobacterium tuberculosis</i> (<i>Bacillus tuberculosis</i>)	1 (1, sex unknown)	—	2	6
No organism found	2	2	4	11
TOTAL	23	10	34	

It will be seen that of the patients nearly 70% were males and about 30% females.

Bacteriology.

Neisseria Meningitidis.

Neisseria meningitidis usually appeared in the typical way, Gram-negative and intracellular, but was more than occasionally seen extracellularly and was often present in smears from limpid fluid before the cell count was unduly raised. We found no difficulty in cultivating it on fresh human blood agar and on Penfold's liver agar, the former giving the best growths from first cultures. Liver agar, however, was superior for maintaining subcultures. Up to the occurrence of the last case of this class in the series no type sera were available commercially, so that I cannot record any classification. Two strains were sent to the Commonwealth Serum Laboratories for typing, but at the time they also had no type sera. The strains were incorporated in the antigen used by them for preparing therapeutic serum. In view of the high mortality from this disease in the hospital (81% in the meningococcal and 100% in all other classes) it was thought that, since Commonwealth Serum Laboratory serum had very little influence on the disease, most of our strains might fall in a single "fast" group or that incorporation of our strains in the stock antigen might promise good results.

Neisseria Catarrhalis.

Neisseria catarrhalis was isolated in pure culture from two patients repeatedly after successive punctures on each. Direct inoculations from freshly drawn fluid as well as from cultures and subcultures into fermentation media yielded no fermentation of dextrose, lactose, maltose, saccharose, mannite, salicin or inulin. On blood agar both yielded a luxuriant pale yellowish-white growth, but one strain grew feebly on plain agar even at 36° C. and quickly died out. This strain is of further interest in that it was agglutinated at one in fifty by our Type III meningococcal serum (titre one in one hundred). Having no Type III *Neisseria meningitidis*, I was unable to check this finding by absorption methods. Again, the fluid from which the strain came contained no glucose. Culturally the organism has the characters of *Neisseria catarrhalis*, but serologically and chemically seems more closely related to *Neisseria meningitidis*.

Streptococcus Pyogenes.

The only streptococcus isolated fermented lactose and mannite, but not salicin and as it conformed in all other ways to the characters of the streptococcus group and was non-haemolytic, it was classified *Streptococcus mitis* (Holman).

Streptococcus Pneumoniae.

Three strains of bile soluble, inulin fermenting encapsulated streptococci were isolated. Two agglutinated to the full titre of our Type I pneumococcal serum, the other was found to be probably in the heterogeneous Group IV.

Haemophilus Influenzae.

Infections associated with *Haemophilus influenzae* form a strikingly large group in this series. All nine strains were isolated exclusively in pure culture more than once in most cases and several times in others from successive samples of fluid from each case. In direct smears the organism almost always manifested definite pleomorphism, cocco-bacillary, small bacillary, long narrow rod and curved thread forms being present as a rule.

All strains grew well on human blood agar as minute transparent dew-drop colonies. After cultivation the organism tended to assume a more uniform size and shape as short stout bacilli of the classical sort. My identification of two strains taken at random was confirmed by the Commonwealth Serum Laboratories. At present it has only a morphological basis, there being no other so far as I am aware. Though all the strains are morphologically identical and were isolated from fluids identical and characteristic from patients running a similar clinical course, fermentation reactions go to show that at least two strains are of a type different one from the other and from all other members of the series and may be a different species. Strain KP/29 did not ferment dextrose, Strain MK/27 fermented maltose and saccharose.

Cytology and Biochemistry.

Table II summarises our findings as far as cytology and biochemistry are concerned.

Tuberculous Meningitis.

In the early stages of tuberculous meningitis the cerebro-spinal fluid contains sugar which

TABLE II.

Class.	Appearance.	Cells.	Globulin.	Sugar.
<i>Neisseria meningitidis</i>	Early, hazy; later, purulent.	Abundant, 300-1,000 and over; mainly polymorphic forms.	+	0
<i>Neisseria catarrhalis</i> .	Very turbid, no clot, sediment.	Abundant, 300-1,000 and over; mainly polymorphic forms.	+	0 (See above.)
<i>Streptococcus pyogenes</i> .	Very turbid, little fibrin.	Abundant, 300-1,000 and over; mainly polymorphic forms.	+	0
<i>Streptococcus pneumoniae</i> .	Turbid, very much fibrin.	Abundant, 300-1,000 and over; mainly polymorphic forms.	+	0
Staphylococcus.	Purulent.	Abundant, 300-1,000 and over; mainly polymorphic forms.	+	0
Influenza.	Hazy, no fibrin.	Numerous, but less than above.	+, but may be trace.	0, but some strains +. (See below.)
Tuberculosis.	Limpid, much fibrin; organisms in fibrin clot.	Scanty; one case, 64; mainly lymphocytes.	+, trace (Pandy). 0 (Nonne). (See below.)	+ or 0 (See below.)
Amicrobial.	Clear.	Normal.	Normal.	Present.

gradually decreases and disappears; detectable globulin may or may not be present in the early stages, but is usually present in abundance later.

Serotherapy.

It is the experience of this hospital that anti-meningococcal serum of whatever sort tried is almost useless. With chance exceptions it will continue to be so until an exhaustive and patient investigation of local strains of *Neisseria meningitidis* is completed. This work should reasonably be expected to produce therapeutic results at least equal to those of Flexner and Gordon.

For reasons well known to bacteriologists expectations of an efficient anti-influenzal serum are at present groundless.

Reports of Cases.

OSTEOCHONDRITIS OF THE VERTEBRAL BODIES.

By J. M. ALCORN

AND

MERRICK O'REILLY.

Moss Vale, New South Wales.

G.E. was first seen by one of us in March, 1926, complaining of pain in the upper part of the abdomen. His age was then nine years and seven months. His previous history contained nothing of interest except that he had had pertussis when seven. The family history was good. His mother stated that he had always been a poor eater and disinclined to boisterous games. He had not been less active than usual recently.

On examination the patient was found to be a pale boy, rather underdeveloped. The right shoulder was slightly dropped. There was a moderate scoliosis of the spinal column, mainly in the thoracic region, with the convexity to the left. There was no tenderness of the spine or increased pain on movement. No further abnormality was revealed by examination of other systems. The diagnosis of spinal injury was made. No X ray examination was made. He was put to bed in the recumbent position

and remained there for three months. No other treatment was ordered. At the end of that time he had apparently recovered. His spine was straight, there was no pain, the appetite had improved and he seemed better in general health. He did not attend school for the remainder of 1926, but otherwise was allowed to move about as usual. He recommenced school in 1927 and remained apparently in good health (except for an attack of measles), but without any liking for strenuous physical exercise till the end of 1927.

He now complained again of abdominal pain, which he located about five centimetres (two inches) above the left anterior superior iliac spine. There was slight scoliosis, not as definite as before. A skiagram was taken early in November and showed the condition illustrated in the accompanying reproductions, though these are prints of skiagrams actually taken later, in June, 1928. It will be seen that the bodies of the fifth and eleventh thoracic vertebrae are considerably flattened in a vertical direction. The bone in what is left of them seems denser than normal. Other vertebral bodies, notably the second lumbar, show less pronounced changes.

A von Pirquet skin test gave no reaction.

The patient has been kept lying on his back, but without any restrictive apparatus, except that he is tied down at night to prevent movement in his sleep. Other treatment consists in generous feeding, fresh air and insolation. At the time of writing (September, 1928) his general condition is very much improved. He has grown fatter and more robust in appearance, the spine is straight and he complains of no pain.

Comment.

It would seem that this case is an instance of a rather rare disease which has been given the name of osteochondritis of the vertebral bodies. As far as we know, no cases have previously been reported in Australia, though Colin Macdonald⁽¹⁾ has described the disease in this journal. Jacques Calvé⁽²⁾ reports a case of his own and one of Dr. Brackett, of Boston. Joseph Buchman⁽³⁾ describes two cases and refers to a third reported by Dr. Gallie, but apart from these five, we are not aware of any other cases mentioned in the literature at our disposal.

Clinically the condition resembles Pott's disease and a diagnosis can be made only by the use of X rays. The aetiology is uncertain, though the disease appears analogous with Perthes's disease of the hip, Schlatter's disease of the knee and Köhler's disease of the foot. Belonging to the same family of diseases is vertebral epiphysitis, described by Scheuermann, Delahaye, Buchman and others, but differing from it, in that it is a disease of the epiphyses and therefore cannot appear before these are formed which

happens, according to Buchman, at about the age of eleven and a half.

In the case here described, it is the vertebral bodies themselves that are attacked and it originated before the age of nine and a half. The ages of onset of symptoms in the five cases referred to above were one and three-quarters, two and a half, five and two at seven years. It is suggested by Calvé and others that an infection of low virulence becomes established in the vertebral bodies leading to a necrosis or at least a rarefaction of the bone. When this stage is reached, the bone is unable to withstand the pressure to which it is subjected, and innumerable minute compression fractures occur, flattening the bone in the direction of pressure. At all events it is a fact of some significance that this and the analogous diseases mentioned above all occur at points of considerable stress and strain. If this theory be true, then the appearance of condensation of the bone, often seen in skiagrams of osteochondritic conditions, must belong to the stage of reaction.

As far as treatment is concerned, none seems indicated beyond rest and general hygienic measures. It is open to discussion whether a plaster of Paris jacket should be applied. Possibly a certain amount of use of the muscles of the back is not a bad thing, provided that relief of weight is secured by recumbency. The ultimate prognosis appears good, though treatment may take from one to three years. Buchman writes: "All of the treated cases have a remaining deformity, which does not interfere with activity."

In connexion with this case we wish to acknowledge the kindness and very valuable assistance of Dr. R. B. Wade, Dr. J. G. Edwards and Dr. C. E. Corlette.

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⁽¹⁾ Colin Macdonald: "The Radiological Aspect of Certain Forms of Osteochondritis," THE MEDICAL JOURNAL OF AUSTRALIA, April 17, 1926, page 423.

⁽²⁾ Jacques Calvé: "A Localized Affection of the Spine, Suggesting Osteochondritis of the Vertebral Body, with the Clinical Aspect of Pott's Disease," *Journal of Bone and Joint Surgery*, January, 1925, page 41.

⁽³⁾ Joseph Buchman: "Osteochondritis of the Vertebral Body," *Journal of Bone and Joint Surgery*, January, 1927, page 55.

Reviews.

PARASITIC WORMS.

DR. H. A. BAYLIS, in "A Manual of Helminthology: Medical and Veterinary" has given a clear and concise account of the various parasitic worms that may be found in man and his domestic animals. These helminths he has arranged in as natural a classification as our present knowledge of them will permit, whilst at the end of the work are given the various mammalian hosts, with a list of the parasitic worms they may harbour. The primary object of the author has been to provide short but succinct descriptions of the genera and species so that the medical man or the veterinarian may with the aid also of the illustrations readily determine at least approximately most of the parasites he is likely to meet. Dr. Baylis is careful to point out that these descriptions contain practical essentials only and are not complete with detail as may be required in a work intended for the helminthic specialist. Being intended for the professional man, the work does not extend to the parasitic worms of wild animals. To include such would have been mostly unnecessary and often bewildering and would have materially increased the size of the book and incidentally its price. Even as it is, we find from the list at the end that man harbours, in a number of instances it is only accidentally,

no less than 119 species—flukes, tapeworms, roundworms and *Acanthocephala*. For the dog ninety-nine have been recorded, for cattle ninety-six and so on. Had only the foresight and knowledge been available to our forefathers, we might have had this continent free from parasitic worms both in man and in his domestic animals. Before the white man came here, the Australian aboriginal, it would seem, was free from helminthic infection. There were no indigenous animals whose parasites would be likely to invade our flocks and herds. We might have peopled Australia with helminth-free humans, cattle, sheep, horses, dogs, fowls *et cetera*. How many deaths from hydatid disease would have been prevented, how much ill health and inefficiency from hookworm disease in Queensland obviated, how many cattle and sheep saved from fluke and lung worm! The various parasitic worms that have been found in Australia in man and in his domestic animals are described by Dr. Baylis and these descriptions are helped by the numerous illustrations. In turning the pages, we come upon quite a number of references to Australian observations or collections. Thus we find that as far back as 1866 Schneider gave the specific name *compressa* to a worm now known as *Ascaridia compressa* from a fowl at Adelaide. The adult of *Filaria sanguinis hominis nocturna*, now known as *Wuchereria bancrofti* (superseding the name *Filaria bancrofti*), was described by Cobbold in 1877 from specimens obtained in Queensland by the late Joseph Bancroft. In 1893 Dr. T. L. Bancroft described *Hepaticola hepatica*, a worm common in the livers of rats in which the egg masses may appear as yellowish spots. In 1910 Cleland and Johnston described *Onchocerca gibsoni*, the cause of worm nodules in the briskets *et cetera* of cattle, and in the same year Dr. Georgina Sweet described *Oxyurisura parvovum* from the eye of the fowl. As the work is one on the helminthic aspect of the parasites dealt with, clinical accounts of their effects on the various hosts necessarily are not included. We feel sure that the volume will be found of much help to the medical man who may have to identify parasitic worms from human beings, and to the veterinary officer whose needs in this respect are far greater. To these and to medical officers of health and to laboratory workers we have pleasure in recommending this work by a distinguished helminthologist.

CANCER AND RADIUM.

"RADIUM TREATMENT OF CANCER," by Mr. Stanford Cade, is a welcome book.¹ The author states in the introduction that he is primarily a surgeon and as a record of personal experience his work must stand. The surgical side of technique obviously appeals most to Mr. Cade throughout, but the description of radium methods and dosage is often slipshod and indefinite. What are obviously described are the French methods of radium treatment applied to the particular conditions both of radium and patients which obtain at the Westminster Hospital, London. One of the conditions is that the supply of radium is insufficient for adequate "distance" radium treatment in most cases. Probably for this reason it is stated early in the book that when Columbia paste is employed at Westminster Hospital for distance treatment, 1.5 centimetres is the thickness used. This no doubt accounts for the fact that "distance" is not usually stated in the text of the book, but it can scarcely be said even then that the description of the treatment of, say, carcinoma of the tonsil from the outside is adequate. In other cases gross quantities of radium for the treatment of lesions are given (for example, carcinoma of the cheek and palate) when the growth may vary in size within very large limits. Milligrammes per square or cubic centimetre is a much better and more helpful and accurate way of describing dosage.

It would perhaps have been better if the author had restricted himself more closely to those aspects of radium

¹"A Manual of Helminthology: Medical and Veterinary," by H. A. Baylis, M.A., D.Sc.; 1929. London: Baillière, Tindall and Cox. Royal 8vo., pp. 314, with illustrations. Price: 30s. net.

¹"Radium Treatment of Cancer," by Stanford Cade, F.R.C.S. (England); 1929. London: J. and A. Churchill; Sydney: Angus and Robertson, Limited. Royal 8vo., pp. 166, with illustrations. Price: 18s. net.

treatment which have appealed to him, in which case he would have avoided the mistake of giving such an inadequate and unhelpful account of the treatment of carcinoma of the skin.

One or two of his observations may be questioned, for example, that œdema always makes treatment difficult. This is often but by no means always so and is in any case merely an indication of other biological conditions which render difficult or contraindicate radium treatment.

Again, radionecrosis and osteonecrosis are given as causes of failure in radium treatment. That they may be signs of overdose or that a tissue will not tolerate an adequate dose for the destruction of a growth is a point that should be emphasized, but tumours will often disappear as in the case of epithelioma of the skin after or while radionecrosis is taking place. Radionecrosis is a complication to be carefully avoided, but it remains nothing but a sign of overdose and not a cause of radiological failure, even though it may point to the fact that a tumour is not sufficiently radio-sensitive for effective radium treatment.

Certain small inaccuracies in the text are rather irritating, for example, page 78, paragraph 1, gives distance in inches, while paragraph 2 for the same patient gives distance in centimetres. There also can be found on page 59 "unpalpable" and elsewhere "alleviating the patient" and the use of the hackneyed expression "masterly inactivity" when "inactivity" is the natural expression to use. "M.C." for milliuries is used instead of "mc." It is difficult to see why the capitals are used when "mgr." is written for another metric system unit.

Mr. Cade has written an interesting and suggestive book which will be very helpful to those starting radium work in Australia.

TROPICAL MEDICINE.

PERHAPS in no branch of medical science have such great and consistent advances been made within recent years as in the field of tropical medicine. Thus considerable difficulty may be experienced in keeping pace with progress in modern knowledge and every tropical practitioner and student of tropical medicine requires the use of some handy volume which, while not too expensive, is edited at sufficiently frequent intervals as always to provide up-to-date information on the ætiology and treatment of diseases met in the tropics. Such a want is filled by Manson's "Tropical Diseases," edited by P. H. Manson-Bahr.

In the ninth edition of this admirable work the high standard previously set is maintained and the information has been brought up to date with but little alteration in the arrangement of the subject matter.¹

In the eighth edition due acknowledgement was given to Noguchi's discovery of the *Leptospira icteroides* and yellow fever was dealt with in the chapter devoted to leptospirosis. Now, however, the *Leptospira icteroides* is regarded as identical with *Leptospira icterohamorrhagiae* and the section dealing with yellow fever has been transferred to a separate chapter.

The uses of "Yatren" in the treatment of dysentery and "Plasmochin" in malaria are fully discussed in the light of recent experience.

The section dealing with medical zoology occupies 185 pages of the appendix and is concise and accurate.

Although there are three new colour plates, five half-tone plates and some thirty new text figures as well as much added information, the volume has only increased in size by 26 pages.

Manson's "Tropical Diseases" occupies a no less necessary place in the tropical practitioner's equipment than his microscope or his hypodermic syringe. As a further recommendation, if any is needed, it might be added that, despite the many revisions and alterations which have been found necessary from time to time, the work still bears the imprint of Manson's master hand.

¹ "Manson's Tropical Diseases: A Manual of the Diseases of Warm Climates." Edited by Philip H. Manson-Bahr, D.S.O., M.A., M.D., D.T.M. and H. (Cantab.), F.R.C.P. (London); Ninth Edition. Revised; 1929. London: Cassell and Company, Limited; Sydney: Angus and Robertson, Limited. Demy 8vo., pp. 941, with illustrations. Price: 38s. net.

A TEXT BOOK OF PATHOLOGY.

THOUGH only four years have elapsed since the appearance of the first edition of Robert Muir's "Text-Book of Pathology," much investigation has been carried out during this period and the additional knowledge gained has warranted the publication of a second edition.¹ Recent advances in scientific knowledge have been incorporated in the book so that the volume in its present form is most useful to students and practitioners alike. The impression gained from a perusal of this book is that one is in touch with the author's personal experience and that the information is not being imparted second hand.

The test that experienced pathologists are wont to apply to new books on pathology is to see how the author grapples with problems which are still unsolved. When this test is applied to Muir's work it is not found wanting. The author's wide experience has enabled him to see the various facts in proper perspective and to give each part of the subject the attention which it deserves.

Descriptions of diseases which are relatively unimportant or concerning which little is known, appear in small print. The illustrations are well selected and on the whole are good; the photomicrographs are clear and the lessons they are meant to teach are obvious.

New sections have been added dealing with the reticulo-endothelial system, anoxæmia and cyanosis, thrombo-angiitis and Raynaud's disease, encephalitis, the flow of cerebro-spinal fluid and hydrocephalus, Riedel's thyreoiditis *et cetera*. The book contains nearly one hundred pages more than the first edition and there are sixty-eight new figures.

It is safe to say that the high reputation gained by the first edition of this book is more than maintained by the second edition.

THE HUMAN CONSTITUTION.

WHILE the early fathers of medicine were content to classify the human habitus as "*phthisicus*" or "*apoplectic*," recent Italian anthropometrists, following de Giovanni, have drawn our attention once again to the connexion between the morphology of organs and disease and "Constitutional Inadequacies," from the pen of Professor Nicola Pende, a pupil of Viola, has now through the excellent translation of Sante Naccarati, been brought within the reach of English-speaking medical practitioners.²

There are for Pende three aspects of the human constitution: morphological, dynamic-humoral and psychological. In this present book he not only details the various inadequacies of each aspect in different human beings, but endeavours to correlate all three. Thus there are morphologically hyperevolute and hypoevolute types, vago-tonic and sympathicotonic, schizoid and cycloid. In a very interesting and ingenious way he introduces the renowned work of Kretschmer on physique and character, weaving Kretschmer's analysis of temperament into the main body of his theme and finding certain morphological inadequacies of the soma to accompany certain well recognized psychic types.

Most of the book is sound and based on accurate and painstaking observation; only occasionally does the author appear to stretch his facts to fit his theories or build conclusions from what to others would still seem to be chaotic. The whole subject of anthropometry and the relation between morphology and morbidity is pregnant with possibilities. In the present book it is as if the author has thrown anthropology, endocrinology, anatomy and pathology into the melting pot and has already succeeded in extracting some brilliant generalizations. But anyone who reads his volume carefully will realize that there is much more to come.

¹ "Text-Book of Pathology," by Robert Muir, M.A., M.D., Sc.D., LL.D., F.R.S.; Second Edition; 1929. London: Edward Arnold and Company. Royal 8vo., pp. 890, with illustrations. Price: 35s. net.

² "Constitutional Inadequacies: An Introduction to the Study of Abnormal Constitutions," by Nicola Pende, M.D., Translated by Sante Naccarati, M.D., Sc.D., Ph.D., with a Foreword by George Draper, M.D.; 1929. Philadelphia: Lea and Febiger. Royal 8vo., pp. 270, with illustrations. Price: \$3.50 net.

The Medical Journal of Australia

SATURDAY, AUGUST 17, 1929.

The Congress.

IN two weeks the third session of the Australasian Medical Congress (British Medical Association) will open its doors. On Monday, September 2, 1929, the inaugural meeting will take place in the Town Hall in the evening and the President, Dr. George H. Abbott, will deliver his address. Prior to the official opening there will be a garden party and a reception at Government House. From Tuesday until Friday the sections will meet according to the programmes which have been drawn up. These programmes have been published in more or less complete form in the columns of this journal during the past few weeks. In addition to the scientific work there will be many social events, garden parties, dinners, excursions, the Congress ball and educational visits to places and institutions of interest. The Executive Committee and the various other smaller committees have planned the work and play for the week and have carried out their tasks thoroughly and with due regard to the inclinations, interests and tastes of the members attending the session. Everyone has been catered for and we can anticipate a sumptuous feast that will find favour with even the most fastidious. The question has often been raised whether congresses should be so full of social events and entertainments or whether the organizers should concentrate their energies on the real object of the gathering, the scientific work. Those who would restrict the social side of congresses, point out that it is highly disappointing to a serious worker to labour long and arduously in preparing a good paper and to read it to a small number of members, while the majority has been tempted to join in some excursion to an attractive beauty spot or is spending the afternoon on some well kept lawn, drinking tea and indulging in light

hearted conversation. A glance through the programmes of the several sections will convince everyone that there will be ample opportunity for medical practitioners in every branch of medical work to listen to good papers on subjects of immediate concern and interest and to participate in discussions. If there is a fault, it is to be sought in the amount of work that will be attempted in eight half-day sessions. The first meeting will be of all the sections on Tuesday morning, when the subject of cancer research and the attempt to combat malignant disease will be debated. In this debate as well as in others some of the papers and remarks will no doubt contain matter that has already been published in the scientific press. It is impossible to insure that only original work and information that has not previously been made public, will be presented at any discussion. Moreover, it must be recognized that in every congress audience the majority has not read all recent contributions to literature and doctrines that are well known to a few, will be quite new to many of those present. Notwithstanding this, it is eminently desirable that those who read papers at congresses, should realize the real objective of such meetings. A congress is a meeting of persons interested in a particular branch of knowledge and those who contribute to the proceedings, accept the task of presenting something that will add to existing knowledge. It is not an occasion for advertisement. In Europe and in the United States of America certain medical practitioners attend congresses with great regularity and offer papers devoid of original thought, presumably for the purpose of keeping their names before the other members of the medical profession. Many of these *habitués* are well known and their repeated contributions are estimated at their true value.

The expedient of combining meetings of sections has been adopted freely by those responsible for the programmes. It is of particular value for practitioners whose special branches of work tend to isolate them from their colleagues in other forms of practice, to have an opportunity of listening to the views and opinions of other specialists. Medicine has become so large and complicated a science

that no one can be expected to master every division of medical study. While the tendency of overspecialization appears to be manifest at the present time, it is evident that the general practitioner, the physician and the surgeon cannot command full knowledge of such specialties as ophthalmology, otology, laryngology and rhinology, radiology, dermatology, bacteriology and immunology and a few other special subjects. A list of the combined meetings was published in our issue of July 20, 1929. If the readers of the papers in these meetings have expended as much care and forethought in the preparation of their contributions as have the organizers in the planning of the meetings, the discussions should prove of great value to medical science. There has been ample time for extended original observation and experiment.

Mention should be made of the museum that is being created for the Congress. It will serve as a safe storehouse for specimens and other exhibits required for the illustration of papers to be read at meetings of the sections. It will also be used for the display of specimens of special interest or significance, rare lesions, lesions peculiarly suited for the purpose of confirming doctrines in pathogenesis, specimens of unusual didactic value. The museum will be used as a means of demonstrating the stages of experimental work. Medical museums are essential parts of modern congresses and the contained exhibits are nearly always worthy of careful and prolonged study. The museum of the third session will be no exception to this rule.

A word should be added in connexion with the trade exhibition. At times medical practitioners find that the multiplicity of new pharmaceutical preparations, of modified apparatus or special instruments and of patented food preparations is so great that it might be wise to disregard the claims of all the manufacturers. Many salesmen are very pertinacious and they often call on medical practitioners at inconvenient times. All this tends to irritate rather than to help. The trade exhibition at a congress is an excellent means of bringing to the notice of members of the medical profession those new goods that may prove useful in the treatment of patients and their affections. Members

attending Congress should make it possible to examine the exhibits, for they may learn something of interest to them and of use to their patients.

Current Comment.

ENDOTHELIOMA AND LYMPHO-EPITHELIOMA.

It is well known that there has been more controversy about endotheliomata than about any class of tumour. The term is applied to new growths which are believed to be derived from the cells lining blood vessels, lymphatic vessels, lymphatic spaces and serous cavities. The difficulty arises partly from the fact that the cells of these tumours, considered morphologically, lie between epithelium and fibroblasts. If the cells are looked upon as fibroblasts, the tumour will be sarcomatous; if they are regarded as epithelium, the tumour will be an epithelioma. If the cells are regarded as endothelial, the embryology of endothelial cells must be considered. It is generally conceded that the lining cells of the body cavities take their origin from cells lining the coelomic cavity of the embryo and that this cavity forms by the splitting of mesodermal tissue. It is also believed by most embryologists that the lining cells of blood and lymphatic vessels arise from mesenchymal cells and are closely related to connective tissue. There is another school composed of those who hold that connective tissue on the one hand is derived from the wandering cells of the mesoderm and that the vascular endothelium arises from cells of the endoderm which are constricted off as an independent tissue and give rise to the entire vascular system. It is obvious that if a tumour is formed of endothelial cells, it is an endothelioma, but if the view just referred to of the origin of the vascular endothelium is accepted, the tumour will be a mesothelioma. A mesothelioma is often understood when the term endothelioma is used. There is no *a priori* reason why mesodermal tissues should be regarded as not having the potentiality for disorderly overgrowth that is possessed by other tissues. On those who would deny this potentiality, there rests the onus of proving its absence, even though it be true, as has been stated, that no single new growth has been shown to be of this nature. In the third edition of his well-known book on neoplastic diseases James Ewing discusses the question of endotheliomata at considerable length. He states that in recent years criticism has been so rigid that comparatively few of the recognized groups of endotheliomata are supported by satisfactory data. He adds that the attempt to enlarge the scope of this group of tumours by assuming an endothelial origin for many growths of uncertain nature has met with only partial success. He holds that if Ribbert's plan of discriminating rigidly against the tendency to discover endothelial

qualities in many tumours of uncertain origin is followed, the discussion of the subject becomes brief. He refers to Borst's conception that the scope of endotheliomata is probably very wide and he states that while he admits the deficiency in present knowledge, his own experience inclines him to pursue the latter course. It is therefore interesting to note that in a recent communication he expresses the opinion that the scope of primary endotheliomata needs reconsideration.¹

This expression of opinion is the result of his study of tumours of the mucous surfaces of the naso-pharynx known as lympho-epitheliomata. This name was applied to these tumours by Regaud and by Schmincke. Their structure is well described in a recent article by Max Cutler.² He pictures them as consisting of wide sheets of epithelial cells and cords growing diffusely and infiltrating the surrounding lymphoid tissue. The cells are large, pale and delicate with a thin cell membrane. The protoplasm is ill defined, has a trabeculated arrangement and often forms a true syncytium. The nuclei are large, clear and pale and present considerable variation in size. Nucleoli are prominent and mitoses abundant. Cutler points out that in places the lymphocytic infiltration is so thick that the tumour cells are hardly visible through the lymphoid structure and that the association of lymphocytes is regarded by many as an essential part of the picture. He also adds that Delbet expressed ignorance of the rôle of the lymphocytes. Ewing refers to the finding of Schmincke that the structure sometimes resembled lymphosarcoma owing to an abundance of lymphocytes. This led the latter to consider the possibility of a mixed origin involving both epithelium and lymphocytes. Derigs reported a case in which lympho-epithelioma arose in the pharynx of a patient, aged fifteen years. In this instance the structure was broken up by lymphocytes and Derigs expressed the opinion that the tumour process resided in the epithelium and that the latter exerted a chemiotactic attraction for lymphocytes even in the metastases which were extensive. Ewing has seldom observed any definite admixture of lymphocytes. He offers the explanation that their admixture may be the result of a low grade inflammation, but he does not think that their presence in metastases can be accounted for in this way. On the evidence available it appears justifiable to conclude that lymphocytic involvement is not an essential feature of these tumours.

One feature of tumours of this kind which brings them into prominence, is the fact that they are very radio-sensitive. In fact Cutler discusses them as one example of radio-sensitive tumours with which his article deals. Ewing states that radio-sensitivity may depend on embryonal qualities of the cells of origin. He goes on to discuss the derivation of tumours of the naso-pharynx from embryonal tissue. Sarcomata are known to respond to radiation and

the cells of which they are composed must be regarded as nearer to embryonal cells than the more highly developed cells of adenomatous or epithelial structures. If radio-sensitivity depends as has been put forward by the workers in the Cancer Research Committee of the University of Sydney on the lead, uranium or other metal content of the cells, the view put forward by Ewing will not be acceptable. Both Ewing and Cutler refer to the difficulty of distinguishing lympho-epitheliomata from other tumours composed of transitional cells or other cells of a relatively simple nature. It seems quite possible that some of the tumours which are reported from time to time as disappearing after radiation when no examination of a specimen has been made, may be lympho-epitheliomata. This is made much more likely owing to the fact that the metastases of this type of tumour may become evident long before the primary growth has become ulcerated. The clinical inference is obvious.

It only remains to call attention again to Ewing's statement on endotheliomata to which reference has already been made. He states that the structure of certain transitional cell carcinomata or lympho-epitheliomata so closely resembles that which many authors including himself have been in the habit of regarding as endotheliomata, that the separation of the two groups of tumours on histological grounds must be regarded as extremely difficult or even impossible. He refers to the peculiarity of the mode of invasion of lymphoid tissue by lympho-epitheliomata and to its production of a structure which seems to spring directly from the lymphoid reticulum. He can see no way of determining whether these large cells uniformly diffused through a lymphoid tissue are invading epithelium or multiplying reticulum cells. In all questionable cases the chances favour a metastatic tumour. At the same time he still finds tumours which must be regarded as primary endotheliomata because of the absence of a primary tumour. It is here that he emphasizes the need for the reconsideration of primary endotheliomata. It is to be hoped that other morbid anatomists will adopt this view, for Ribbert's view is undoubtedly correct. If no tumour is labelled as endothelioma unless there are very good grounds for the decision, progress in knowledge will be made.

THE WALTER AND ELIZA HALL INSTITUTE OF RESEARCH.

The tenth annual report of the Walter and Eliza Hall Institute of Research in Pathology and Medicine contains a comprehensive survey of the activities of its staff during the past twelve months. It is of interest to note that the Commonwealth Government has given the sum of £4,000 for medical research at the Institute and that the Edward Wilson (*The Argus*) Trust has continued its support to the Biochemical Department to the extent of £1,000.

¹ *The American Journal of Pathology*, March, 1929.

² *Archives of Surgery*, June, 1929.

Abstracts from Current Medical Literature.

DERMATOLOGY.

Soft Rays in Dermatology.

JOSEPH J. ELLER (*American Journal of Roentgenology and Radium Therapy*, November, 1927) states that "super-soft" Röntgen rays of two Angström units, known as *Grenzstrahlen* or oversoft rays, have been found to have a definite field of usefulness in the armamentarium of the dermatologist. Epithelioma of the eyelid is the one disease in which these rays, as generated by eight kilovolts with the use of a Müller tube (a hot cathode tube with a Lindemann glass window) are definitely superior to the commonly used shorter wave length Röntgen rays. Other conditions also successfully treated by supersoft rays are dermatophytosis, Dühring's disease, *tichen planus hypertrophicus*, *perleche*, *tinea capitis*, *verruca vulgaris*, small keloids, neuro-dermatitis and *syccosis barba*. Eight kilovolts, eight milliamperes of current, at six centimetres distance, passing for three minutes through a Müller tube being considered as an erythema dose, the treatment ordinarily consisted of one to two doses at two to four week intervals. While the author has seen no atrophy or telangiectasis following three units of exposure, he warns that these rays are not without the dangers of such possible sequelae, although they are probably much less frequent than in the usual Röntgen therapy field.

Skin Diseases During Pregnancy.

A. BUSCHKE AND W. CURTH (*Münchener Medizinische Wochenschrift*, March 1, 1929) discuss various skin diseases whose presence during pregnancy may require induction of abortion. Examples of *impetigo herpetiformis*, pemphigus of pregnancy and *dermatitis herpetiformis* are quoted. From a critical survey of the literature and in view of their own experiences, the authors consider that *impetigo herpetiformis* during pregnancy should be treated by immediate interruption of the pregnancy because of the great risk of life, even though this may not save the patient. On the other hand, *herpes gestationis* in the absence of complications presents a much better prognosis. Induction of abortion should never be required for the skin lesion alone. The position of pemphigus is not so clear. When pregnancy supervenes in a woman already suffering from pemphigus, induction may be required in severe cases, although it is uncertain whether the progress of the disease will be greatly affected by such interference. When the pregnancy and pemphigus are concurrent, the prognosis is better and usually there are no reasons to interfere. In the differential diagnosis between pemphigus and *erythema exudativum multiforme* the authors have found

that the estimation of the chloride content of the blood is of value. Increased retention is noted in the first disease as compared with no change in the latter.

Treatment of Epidermophytosis of Toes.

ALDO CASTELLANI (*Journal of Tropical Medicine and Hygiene*, March 15, 1929) describes his method of treating epidermophytosis of the toes. This condition is common in the tropics, where it goes under a variety of names, "mango toe," "Hong Kong toe" *et cetera*. A complete eradication of the infection is difficult. Castellani uses a paint consisting of ordinary carbol fuchsin (Ziehl Neelsen's stain) to which has been added 1% boric acid, 5% acetone and 10% resorcin. The paint is applied twice a day for one week, then after three days' rest once or twice a day for a further period of one week. In some instances the treatment has to be continued over a much longer period. The treatment is also found useful for epidermophytosis in other situations, especially when ointments are contraindicated, as in cases in which there is evidence of moist eczematous dermatitis.

Coccidioidal Granuloma.

J. F. BURGESS (*The British Journal of Dermatology and Syphilis*, April, 1929) reports the sporadic occurrence of coccidioidal granuloma in a male, aged thirty-three years, at Montreal. The condition was first noticed as a furuncle-like lesion on the back of the left hand and forearm. It was fluctuating and was incised. The patient returned again a year later when the lesion resembled a chronic inflammatory granuloma. Numerous sinuses were present. The Wassermann test yielded a positive response and an X ray examination revealed periostitis of the ring and little fingers. Direct smears of the pus contained doubly contoured yeast cells. The diagnosis of blastomycotic dermatitis was then made. Inoculation into a mouse produced a lesion with typical yeast bodies. Treatment with potassium iodide effected a cure in six months.

The Reticular Syphilide.

C. RASCH (*The British Journal of Dermatology and Syphilis*, April, 1929) describes two examples of congenital syphilis in children which he classes as a variety of the "diffuse infiltration of the skin" first observed by Trousseau and Lasègue. Both infections occurred in children under two months and appeared as round, elongated and especially band-shaped slightly infiltrated plaques which coalesced into irregular reticular lesions. The extremities and buttocks were chiefly affected and the head in one of the children. The author presumes that the rash is associated with the cutaneous veins, especially with the second venous plexus and sug-

gests that it is the first stage of the diffuse infiltration of the skin and would, if it had not been treated, have progressed to this.

Cancer of the Skin Due to Occupation.

W. J. O'DONOVAN (*Archives of Dermatology and Syphilology*, April, 1929) discusses the question of skin cancer in persons whose occupations lead them into close association with arsenic, oils, X rays, actinic light and tar. Dealing especially with tar cancer, the writer is assisted by a review of all the surgical and dermatological cancers seen at the London Hospital between 1903 and 1920. The occupations of the tar workers were of many kinds. A point of clinical importance was the recognition of a latent period. It is stated that there is an intense dislike on the part of the workers to washing immediately after work owing to a subjective burning sensation. Another feature is the multiplicity of the carcinomatous lesions. The face, forearms and scrotum were chiefly affected. An attempt was made to narrow down the field of research by investigating patients in a factory when one of the many constituents of tar was handled. An opportunity was offered in the case of an alizarin factory, where crude anthracene was largely dealt with. The deep staining of the hands and faces of these workers was most noteworthy. Those responsible for the sublimation process and final packing were free. Unlike cancer caused by tar, a multiplicity of growths was not seen. Minor lesions, acne, keratoses, telangiectases and pigmentation are common features in workers in the plant, but the handling of purified anthracene does not appear to produce the same results as the handling of anthracene cake.

UROLOGY.

Prevention of Recurrent Renal Calculi.

E. O. NAX (*Journal of Urology*, November, 1928) considers that the management of renal calculi is peculiarly the business of the urological specialist, as fine points in diagnosis, preoperative treatment and post-operative treatment can be carried out efficiently only by such a specialist. No patient with renal calculi should be operated upon without preliminary cystoscopic study and pyelography and when there is much infection, the latter should be reduced by preoperative renal lavage. At operation every effort should be made to obviate the leaving behind of a second or extra unsuspected calculus or even of tiny grains of stone. An X ray film, taken during the operation and rapidly developed, will help much in this regard. Three weeks after removal of the stone lavage of the affected renal pelvis is carried out. Mercurochrome (0.5% solution) is

used. The procedure is repeated once a week until the pus cells have practically disappeared. After this the patient is asked to report for examination every three months for three years. Before operation all possible sources of focal infection are investigated and if any infection is found, as in the teeth or tonsils, it is treated.

Pyelovenous Reflux of the Kidney.

H. VON SAUER (*Zeitschrift für Urologie*, March, 1929) has studied pyelovenous reflux with the contrast solution which he prefers. This is "Umbrenal," a salt of iodine and lithium, and is used in a 25% concentration. When this solution is injected into the pelvis in such amounts that the intrapelvic pressure rises sufficiently, reflux into the circulation occurs, as evidenced by excretion of iodine by the other kidney in a very short time, for example, about five minutes. In pyelitis or renal calculus the conditions of pressure necessary for this back flow are the same as in normal kidneys, but when any hydronephrotic element is present, a smaller pressure will bring about pyelovenous reflux. The author has found with his ordinary pyelographic work with "Umbrenal" that when no great pressure is employed, iodine is often found in the urine coming from the opposite kidney. He also thinks that from this cause arise the symptoms of headache, malaise or vomiting which not infrequently occur after pyelography.

Treatment of Prostatic Hypertrophy.

E. HAIM (*Münchener Medizinische Wochenschrift*, November 23, 1928) describes a modification of Young's perineal operation for the removal of the prostate. Renal efficiency tests are performed on all patients and if these be not satisfactory, the *vas deferens* is ligatured and a retention catheter left in the bladder until the patient improves. At this stage and as a primary procedure in healthy patients he operates by the perineal route, taking care to separate the external sphincter and to keep it intact. After removal of the gland a catheter is passed *per urethram* into the bladder. The cavity is drained with a strip of gauze and the muscles brought together as much as possible to limit the size of the cavity. The patient can be allowed out of bed after the first day and the author claims good results with the minimum of dressings and very slight risk of embolism. He has operated on twenty-seven patients so far with excellent results.

Vesico-Vaginal Fistula.

F. FARMAN AND R. C. THOMPSON (*Journal of Urology*, December, 1928) consider that vesico-vaginal fistulae opening high up into the vagina are better attacked transvesically, while those involving the lower part of the vesico-vaginal septum lend themselves to dissection and closure by the usual vaginal route. In the suprapubic

operation the fistulous tract and all surrounding scar tissue are excised from the thick vesico-vaginal septum until the raw surfaces are soft and plastic. This leaves an opening two or three times the size of the original fistula to be closed by suture. The next step is mobilization of the bladder, that is, separating it from the wall of the vagina; this is done by dissection through the opening left after the excision of the fistula. In closure of the fistula it is necessary to secure a water-tight result. The writers use the urethral and suprapubic drainage with de Pezzer drains and keep the patient on her side or abdomen for one week. The suprapubic drain is removed at the end of two weeks and the urethral catheter about three or four days later. The closure of the fistula is in three planes, first, a purse string of chromicized gut to close the vaginal wall, secondly, a purse string of heavy plain catgut approximating the bladder muscle layers and finally a continuous suture of plain gut closing the bladder mucosa. All sutures are applied and tied by approach through the bladder.

Routes of Absorption in Hydronephrosis.

D. M. MORISON (*British Journal of Urology*, March, 1929) has conducted experiments on live rabbits and dogs to try to elucidate further the problem of the fate of the retained fluid in partial and complete hydronephroses. It is generally considered that the obstructed contents do not pass into absolute stasis, but by some process of interchange, they continue in a process of circulation. It has been proved that many substances varying in physical structure are absorbed into the general circulation after introduction into the renal pelvis. The problem to be solved is that of the route of entry. Two views are held: (i) That absorption occurs solely through the agency of the renal tubules and (ii) that there is a direct backflow into adjacent venules and thus into the circulation. In the work that has been done dye media have been injected into the renal pelvis in too great an amount and at pressures fully capable of producing trauma and forcing the dye into abnormal channels. In the present work the dangers of fallacies thus produced are obviated. The results noted have been as follows: Two routes of absorption have been observed, *id est*, lymphatic and tubular. At the outset of complete ureteric obstruction there ensues for the first two or three days a purely lymphatic and apparently active absorption from the walls of the renal pelvis and ureter. After about the third day tubular absorption commences and continues more actively than the lymphatic. Certain histological features are readily adduced to account for the primary delay in lymphatic absorption. Even a short period of "back pressure" favours tubular absorption. The convoluted tubules of the peripheral glomeruli

are the first to take on this function and as pressure atrophy progressively supervenes, the subjacent layers continue the process of reabsorption. It is considered that the so-called "pyelovenous backflow" is probably due to trauma and cannot accordingly be regarded as a usual factor.

Diverticulum of the Male Urethra.

O. S. LOWSLEY AND R. GUTTERREZ (*Zeitschrift für Urologie*, 1929, Special Number, *Deutsche Gesellschaft für Urologie*) report in detail six cases of diverticulum of the male urethra. Although the condition is rare, it is easily diagnosed as the perineal swelling fills up and becomes hard during urination. On pressure the patient passes more urine through the meatus and the tumour becomes flaccid again. As a rule the swelling is tender only when it is full. The urine is usually infective and the patient experiences some difficulty and pain on urination. In the literature about 25% of all diverticula are acquired, the remainder is congenital. The acquired forms result from abscess formation in connexion with the urethra or from trauma. The diagnosis may be clinched by means of urethroscopy and by urethrograms. Surgical removal of the sac is usually called for and must be done by the perineal route and is followed by careful suture of the urethra and by the establishment of suprapubic suction drainage in order to deviate the urine for a week or so from the site of operation.

Ephedrine-Controlled Spinal Anæsthesia.

N. F. OCKERBLAD AND T. G. DILLON (*Journal of Urology*, January, 1929) consider that ephedrine properly used, eliminates most of the dangers of spinal anaesthesia. It entirely and successfully combats the fall in blood pressure following on the necessary splanchnic paralysis. In removing this element of danger the whole train of evil effects dependent upon it do not appear. In regard to the injection time there is a period of from about five minutes before the lumbar puncture to five minutes after it, which is the all important period, for it is during this time that control of the blood pressure is either gained or lost. No period of depression follows the use of ephedrine and it is completely metabolized and excreted. Ephedrine in repeated doses of 0.05 gramme should be injected before the spinal injection if the blood pressure is already low, while after the injection any fall in blood pressure should be quietly anticipated or at least checked during the early part of its fall, rather than be allowed to become properly established. As soon as a tendency to fall appears, the drug should be injected at three minute intervals in doses of 0.05 gramme until the pressure is rising. The summit of the rise should be awaited and the tendency to fall should be treated continuously.

British Medical Association News.

SCIENTIFIC.

A MEETING OF THE SOUTH-WESTERN SUBDIVISION OF THE VICTORIAN BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held at Hamilton on April 20 and 21, 1929. In the absence through illness of Dr. H. I. HOLMES, Dr. F. E. LITTLEWOOD took the chair at the various sessions.

Hydatid Disease of the Lung.

Dr. S. C. FITZPATRICK read a paper entitled: "Hydatid of the Lung" (see page 214). He illustrated his remarks by X ray films.

Mr. H. R. DEW offered his congratulations to Dr. Fitzpatrick on a unique series of cases, but felt that all the questions which arose, were not easily answerable. The high age incidence in the series was uncommon. At the Children's Hospital, Melbourne, the incidence of lung cysts was almost as high as that of liver cysts. In the country some of these lung cysts were possibly spat up unnoticed. Mr. Dew hoped that Dr. Fitzpatrick would go on collecting such a valuable series. The rate of growth seemed to be variable and the laws of parasitic growth were difficult to follow, but information on this point was urgently needed. The association of hydatid and tuberculosis of the lungs was well known and possibly it seemed more common because of the practice in some countries of segregating all patients with hæmoptysis together. In answer to a question Mr. Dew said that to his knowledge desensitization against hydatid substance had never been tried clinically, but it was possible to counteract the danger of anaphylaxis by adrenalin injection. With regard to the Casoni test, its value was doubtful in insurance cases; a patient should not be submitted to operation on the Casoni test alone.

Diagnostically the injection of "Lipiodol" into the bronchi had only been tried in a few cases of suspected hydatid, but it had proved of some value in three such cases in Sydney recently. In such cases bronchoscopy was rather a dangerous procedure. With regard to the treatment of ruptured and suppurating hydatid cysts of the lung, Mr. Dew said that he had used both pneumothorax and thoracoplasty and had used the Saarbruck method of thoracoplasty in many cases of suppurating cysts with some success.

A small unruptured mediastinal cyst was probably secondary, it might be dead and it was best to leave it alone. Mr. Dew said that he was in favour of attacking a large growing hydatid cyst surgically.

Dr. LESLIE HURLEY said that he was interested in the site of the lung cysts. In a series of his own he had seen a majority in the right lung and usually at the base, namely in twenty-seven out of thirty-three cases. Dr. Hurley asked, if hydatid infection was only by the blood stream, why should there be this localization? Statistics in the Argentine showed the same localization and they offered the explanation that the right pulmonary artery was larger than the left. Mr. F. D. Bird had suggested that pulmonary hydatid might arise as an air-borne infection and such an air-borne infection had been produced experimentally. Dr. Hurley advised leaving centrally placed cysts alone, as in their operative statistics the mortality was high and the prognosis of spontaneous rupture into a bronchus was good.

In reply Dr. Fitzpatrick read the notes of an interesting case referred by a colleague, and showed an X ray print of a lung photograph.

The patient, a woman, aged thirty-eight years, of Coonwarra, South Australia (a hydatid area) had been referred by Dr. Newman on account of "irregularity of the iris of the right eye." Eight years previously the right eye had seemed to be smaller and receded compared with the left eye and to have a smaller pupil. The eyesight had not been affected. Six years previously a dull ache had been present on the outer side of the right elbow. Four to five years previously severe pains had occurred behind the right shoulder in the suprascapular fossa, with definite

hyperæsthesia, it had lasted six weeks, had occurred several times a day and the patient had had to keep the arm in a sling. The pain had occurred only occasionally since. Three to four years previously and till lately the hand and anterior forearm had felt icy cold. This had come on in attacks with redness and swelling. The fingers had felt less flexible and swollen. There had been no unilateral flushing or sweating. Otherwise the patient had been in excellent health.

According to the past history the patient was an old asthmatic, sensitive to horse dandruff. She had suffered from hay fever. She had never nursed animals always about the house. Much hydatid disease had occurred in the district. The father and mother were eighty-five and eighty-two and all the members of the family were alive and healthy.

On examination the right pupil was the smaller; the reflexes had been the same on both sides. Decided dullness had been present at the right apex with defective breathing sounds. Defective movements had been noted in the right anterior part of the chest. The veins had been fuller in the right suprascapular fossa. Both pulses had been the same and synchronous. The systolic and diastolic pressures in the right arm had been 115 and 80 millimetres of mercury respectively and in the left arm 120 and 85 millimetres.

On X ray examination a large globular shadow had been found at the apex of the right lung. This had been due to a hydatid cyst. Hydatid tests, both Casoni and complement fixation, had yielded no reaction. The order of involvement of the nerve roots in this case suggested irregularity of growth of the cyst.

Referring to Dr. Dew's remarks on pulmonary hydatids in children, Dr. Fitzpatrick said that he had been on the lookout for such cysts in children for some years, but had not met with any. He did not think it correct to state that more cysts occurred peripherally than centrally, because central cysts probably ruptured more frequently leading to spontaneous cure. He believed that pulmonary infarcts occurred most frequently at the bases and in the middle lobe of the right lung and hydatid cysts might follow the same laws.

Bronchiectasis.

Dr. FITZPATRICK showed a single man, aged thirty-eight years, a wharf labourer, who had first consulted him on March 1, 1928, complaining of troublesome cough for the past eighteen months following "influenza." There had been much loss of weight and shortness of breath.

On examination the patient's weight which had been 72.5 kilograms (eleven stone seven pounds) two years previously, had been only 60.5 kilograms (nine stone eight and a half pounds). Physical signs of widespread involvement of the right lung with gross fibrosis and cavitation had been present, the left lung had appeared only slightly affected. The patient had been admitted to a public hospital for the production of an artificial pneumothorax. Two compressions had been given. More reaction had occurred after the second and pain in the right side. On the third attempt only one hundred cubic centimetres had been introduced.

After he had been out of hospital four and a half weeks, his weight had increased by 3.8 kilograms (eight and a half pounds). He had eaten well, slept well, his cough had been loose, he had spat up sixty cubic centimetres (four fluid ounces) every day. He had been sent to the public hospital again. An unsuccessful attempt had been made to produce an artificial pneumothorax higher up. The pleura had appeared to be becoming adherent generally. He had left hospital weighing 60.3 kilograms (nine stone eight pounds). The needle hole had persisted as a sinus.

On August 27, 1928, he had weighed 61.4 kilograms (nine stone ten and a half pounds). The sputum had greatly increased. He had had two severe attacks of hæmoptysis. Calcium chloride had been given intravenously.

On October 18, 1928, the first stage of thoracoplasty had been performed under local anaesthesia.

On December 4, 1928, 7.5 centimetres (three inches) of the four lower ribs had been resected extrapleurally near the angle.

On December 4, 1928, the second stage of thoracoplasty had been performed under local anaesthesia. The fourth, fifth and sixth ribs had been resected extrapleurally. He had gained 2.7 kilograms (six pounds) in weight. No evidence of spread in the left lung had been found.

It was proposed to complete the thoracoplasty at a later date under local anaesthesia and to bring forward the result at a later date.

Carcinoma of the Sigmoid Colon.

Dr. Fitzpatrick's next patient was a man, aged sixty-four years, a farmer with twelve children.

On April 10, 1924, he had been referred to Dr. Fitzpatrick as probably suffering from appendicitis and for X ray investigation. He had complained of colicky pain radiating upwards from the right testicle. Slight pains present for four years, had become severe one month previously.

On examination the prostate had been slightly enlarged on the right side. The residual urine had measured thirty cubic centimetres (two fluid ounces). It had been neutral in reaction, with a specific gravity of 1010 and a trace of albumin, but no sugar. In the differential diagnosis prostatism, low ureteric stone and appendicitis had been considered. X ray examination of the kidneys had been made and a barium enema had been given. A diagnosis of ureteric stone had been made. The patient had been sent home and had been given medical treatment. He had passed a stone some weeks later and no further symptoms had followed.

On February 15, 1929, this patient had again been sent to Dr. Fitzpatrick complaining of constipation and flatulence following an attack of influenza. For several days he had had four small motions daily and then had become constipated again. This constipation had continued for two weeks. He had gone to Dr. Collins who ordered purgatives and high enemata with only small flecks of faeces as a result. He had been then sent to Dr. Fitzpatrick for further treatment. X ray examination with barium enemata had revealed a stricture of the pelvic colon.

On February 18, 1929, operation had disclosed a tight constriction of the pelvic colon, macroscopically due to a sclerosing carcinoma. Fifteen centimetres (six inches) of colon had been mobilized and removed by Paul's method, the modifications suggested by Devine in a recent number of *The Journal of the College of Surgeons of Australasia* being used. The specimen was shown. The patient had made a comfortable and uneventful recovery. The X ray examination demonstrated a method of combining a barium meal and barium enema to demonstrate a colonic lesion.

Splenomegaly with Anaemia.

Dr. Fitzpatrick also showed a woman, aged thirty years, who had first been seen by him on October 12, 1928, with acute follicular tonsillitis. Following this a submental abscess had occurred which was incised. A month later the patient's red cell count had been 3,850,000 per cubic millimetre and the haemoglobin value 77%. Leucopenia had been present. Two years before this she had had an attack of painless jaundice, the origin of which her medical attendant could not determine. Since then her spleen had been observed to be enlarging slowly. No liver enlargement had been found at any time. The appendix had been removed in 1919. No dyspeptic symptoms had been present. No haemorrhages had occurred.

On examination the patient's weight had been fifty-nine kilograms (nine stone five pounds). Her height was 152.5 centimetres (five feet one inch). She had had a sallow colour, but no wasting, one doubtful tooth had been found in an otherwise good dentition. Recessed dirty tonsils had been found. The thyroid had been normal in size. In the chest a few rhonchi had been heard in the right lung. In the heart nothing abnormal had been detected. The spleen had been enlarged to the level of the umbilicus, it had been smooth, painless and movable with respiration. There had been no ascites. The urine had contained no albumin and no sugar. No lymphatic glands had been enlarged. No haemorrhages had occurred. No reaction had occurred with the Wassermann test. The blood film had contained no abnormal white cells. Rest, iron and liver feeding had been ordered empirically.

On February 21, 1929, the erythrocytes had numbered 3,900,000 per cubic millimetre and the haemoglobin value had been 100%. X ray examination of the nasal sinuses had revealed opacity in the left maxillary sinus. Both maxillary sinuses had then been punctured and frank pus had been washed out of the left one. This had been repeated a week later. No further collection had occurred. A tooth showing an apical abscess had also been extracted. The general health of the patient had improved definitely and it was proposed to obtain a report on the fragility of her red blood corpuscles. It was necessary to exclude acholuric familial jaundice and certain rarer causes before the diagnosis of splenic anaemia was left. Splenectomy was contemplated.

Carcinoma of the Breast.

Dr. Fitzpatrick showed a female patient, unmarried, aged sixty-five years. She had first noticed a painless lump in the left breast five months previously. Two months later it had broken out through the skin. According to the pathological report the growth was a very active medullary carcinoma.

Perthes's Disease.

Dr. J. LE M. KNEEBONE showed a male patient, aged fifteen years, who had fallen and hurt his right hip seventeen months previously while riding a bicycle. Some days later he had noticed a limp, but had not sought advice for six weeks. There had been no shortening at that time and all movements of the limb at the hip joint had been normal. Four months after the injury there had been 1.25 centimetres (half an inch) of shortening, wasting of the thigh had been present and the limp worse.

X ray examination revealed mushrooming of the head of the femur. He had been allowed to get about since then and although a definite limp and limitation of motion were present, he was able to walk long distances without pain or other disability. He had still about 1.25 centimetres of shortening and the distortion of the head of the femur as shown by the X rays seemed to have increased.

Dr. W. J. SAXTON showed a boy, aged eight years, who had first been seen on September 9, 1927, complaining of vague abdominal pain. On March 12, 1928, he had again been seen. This time he had complained of left popliteal pain, slight twinges of pain in the right popliteal fossa and lameness and he had occasionally dropped to the ground when walking.

Though these symptoms had been present on and off during the last nine months, they had been more severe and persistent during the last six days when they were accompanied by abdominal pain and nausea. On examination he had exhibited a definite limp with the left lower limb. In the supine position this limb had appeared shorter than the right and lay slightly flexed, adducted and inwardly rotated. There was no real shortening of this limb, but wasting was present to the extent of 1.8 centimetres (three-quarters of an inch) at about the mid-thigh circumference and six millimetres (one-quarter of an inch) in the calf. All movements at the hip joint except adduction were limited. The temperature was 37.4° C. (99.4° F.), the pulse rate was 80 in the minute. No reaction had been obtained by the Wassermann test or by the von Pirquet test. The patient had been referred to Dr. Fitzpatrick for X ray examination. Treatment had consisted in heliotherapy and rest by means of a plaster bed, though strict immobilization was not aimed at.

Delayed Union of Fracture.

Dr. D. W. NEVILLE showed a patient, aged thirty-eight years, who illustrated delayed union in a fracture of both bones of the leg.

On May 28, 1928, he had been riding a motor cycle when he was struck by a motor car and his right leg was crushed against his machine. When Dr. Neville saw him two or three hours later the leg had been put up on a back splint. There had been a greatly contused wound on the front of the shin and a smaller wound over the fibula about the same level. Both bones had been broken at this spot, but had appeared to be in fairly good position except for a projection medially of the upper end of the lower fragment of the tibia.

Extension had been applied to the foot until all suppuration had ceased and the wounds were healed.

On July 16, owing to persistence of the deformity referred to, an X ray photograph of the limb had been taken and had revealed medial displacement of the upper ends of both lower fragments with about 2.5 centimetres (one inch) of overlapping. There had also been a detached fragment of the fibula at the site of fracture.

Attempts at reduction of the deformity under general anaesthesia had failed. The scar tissue had then been excised, the bone ends cleared of soft tissues and resected. The tibial fragments had been secured by suturing together the reflected flaps of periosteum. Ten weeks had elapsed and there had been no firm union. X ray examination had revealed some output of new bone without any callus.

The effect of greater mobility had been tried, the leg lying for some hours each day between sandbags without any splint. Light plaster moulds had been applied when the patient walked on crutches or went out in the sun in a wheelchair. Three months of this régime had brought about some little improvement in the way of new bone formation. The position of the fragments had been unaltered and it had been apparent that the fragments of the fibula would eventually need to be brought together by some such means as a sliding graft. However, it had been considered wise to concentrate for the time being on obtaining good union of the tibia.

It had been decided to attempt to secure the limb in a splint which would permit some movement of the bone ends and at the same time allow the patient to walk about and accept employment without any weight being carried by the still ununited bone. The appliance fitted was a short calliper splint in which the weight was transmitted to a band of plaster strengthened with perforated zinc fitting below the condyle of the tibia and the head of the fibula. Unfortunately the first one fitted had become very loose about the knee after a time and the weight had been largely carried by the limb itself for a few weeks. However, the appliance had proved beneficial in shortening the period of unemployment and in stimulating new bone formation about the site of union.

Dr. Neville said that he had to consider whether he should abandon the short calliper in favour of a Thomas walking calliper which might, however, necessitate unemployment.

Other points on which he invited discussion, were whether and at what stage fixation by plating might have achieved better results and whether diathermy was of real use in such cases of delayed union.

Mr. HAROLD DEW suggested that it might become necessary to bone-graft the tibia also, as the bone cells were obviously deficient. He deprecated plating in such a case.

Dr. F. K. NORRIS recommended leaving the fracture on the same appliance for another three months at least before despairing of union.

Acute Arthritis of the Sacro-iliac Joint.

Dr. J. LE M. KNEEBONE showed a male patient, aged seventeen years, who had been admitted to hospital on March 10, 1927, suffering from pneumonia. He had given a history of having had boils on the back of the neck for a month. After a week's illness with a high swinging temperature, severe "rheumatic" pains had occurred in the left side of the back low down; aching had occurred in other joints and the right hand had become swollen. He had become very seriously ill and had had several rigors. Spontaneous evacuation of pus had occurred above the right buttock three weeks after the onset of the pain. He had been confined to bed for a further four weeks. Two months later the sinus had still been discharging, but he had been able to play football. After some months the sinus had closed, but had broken down a month later. No sequestra had been discharged at any time. It seemed to be closed finally.

Congenital Dislocation of the Hip Joint.

Dr. Kneebone also showed a female patient, aged three and a half years. The mother had noticed a limp when the child had first begun to walk and the right leg had

seemed shorter than the left. There had been 1.25 centimetres (half an inch) of shortening of the limb and abduction had been diminished, but there had been no abnormal up and down mobility of the leg nor could the head of the femur be felt in the gluteal region.

Under an anaesthetic, after stretching, reduction had easily been effected, but the stability of the joint after reduction had not been great, so that redislocation had occurred in the "70-70-0" position and the "90-90-0" position had had to be adopted.

Epiloia.

Dr. Kneebone's next patient was a mentally backward girl of six years, who had had fits, accompanied by loss of consciousness, for two years. She had usually been free from attacks for a month at a time and then fits up to sixteen or more in number had occurred in a day. There was no family history of fits, asthma or sick attacks.

On routine examination an irregular swelling was found in each kidney region. There had been no obvious increase in size during the last three months. No urinary symptoms had been present, nor could any evidence of renal inefficiency be obtained.

The fits apparently had been controlled by "Luminal," 0.09 gramme (one and a half grains) each night.

Dr. FRANK NORRIS pointed out the presence of *adenoma sebaceum* in the nasal folds and considered the case one of epiloia, in which condition mental deficiency was associated with epilepsy, *adenoma sebaceum* and cystic disease of the kidneys and other organs.

Hodgkin's Disease.

Dr. T. G. OLIPHANT showed a male patient, aged seventeen years, whose illness had begun eighteen months previously with enlargement of glands in the right side of the neck. The glands had been discreet and soft. The spleen had been enlarged and soft. The red count had then been 5,250,000 per cubic millimetre and the white count 6,800. He had not been seen again until ten months later, when he was very ill with extreme anaemia and general oedema. The spleen had been enlarged almost to the umbilicus and the same group of glands had been enlarged in the neck. The liver had not been enlarged. The red blood corpuscles had then numbered 1,272,000 per cubic millimetre and the leucocyte count 1,000.

Under treatment with arsenic and iron he had improved rapidly and enlargement of the spleen and glands had subsided. Three months later (November 5, 1928) the cervical glands had begun to increase in size in spite of *liquor arsenicalis*, so he had been sent to Melbourne for X ray therapy.

The Melbourne Hospital had reported that the chest was normal and the mediastinum quite clear. The erythrocytes had numbered 4,500,000 per cubic millimetre, the haemoglobin value had been 70%. The leucocytes had numbered 12,000 per cubic millimetre. Of these the polymorphonuclear cells had been 70%, large lymphocytes 12%, transitional cells 18%, reticulocytes approximately 1%. Examination of section of a gland removed from the neck had revealed Hodgkin's disease. Treatment had been by arsenic and deep X ray therapy.

About a month previously (March 8, 1929) he had had an attack of diarrhoea and vomiting accompanied by pyrexia. The vomiting and pyrexia (up to 40° C. or 104° F.) had continued for fourteen days and had then subsided. However, the spleen had continued to increase in size and the anaemia had again reached an extreme degree and he had seemed steadily to be going down hill. *Liquor arsenicalis* had alone been administered during this period.

About a fortnight previously liver feeding had been commenced and an almost immediate improvement had been noticed both in the general condition and the size of the spleen.

During the last week there has been a recrudescence of the pyrexia.

Puerperal Septicæmia.

Dr. NORMAN DALE discussed the treatment of puerperal septicæmia by quinine bihydrochloride. He said that in *The Journal of Obstetrics and Gynaecology of the British Empire*, Volume XXX, Number 4, 1923, Gordon Luker had

described a method of treating puerperal septicæmia with antistreptococcal serum and quinine bihydrochloride, the latter drug being the basis of the treatment. Luker's routine treatment was as follows: Antistreptococcal serum was given subcutaneously on the first day in a dose of thirty cubic centimetres, on the second day thirty cubic centimetres were given and on the third day two hundred cubic centimetres. Intravenous injections of quinine bihydrochloride were given on the fourth, sixth and eighth days of disease; 0.3 gramme (five grains) was given in ten cubic centimetres of sterile water in the same doses on the fifth, seventh, ninth, tenth, eleventh and twelfth days.

Dr. Dale stressed the point that after an intramuscular injection the fluid should be well massaged away from the site of injection in order to avoid local abscess formation. He said that the notes and charts of the three cases shown would illustrate the beneficial effects obtained by quinine bihydrochloride. It was noticed that the patients all seemed to be improved within twenty-four hours of an injection, especially if the intravenous route were used. The patient would have a lowered temperature and pulse rate and the facial aspect would be altered for the better. Cinchonism had been observed in one patient, but only after repeated injections. One quinine abscess had occurred.

Two of the infections had been complicated by pyelitis. In one instance (Case II) the pyelitis had occurred between the sixth and twelfth days and had responded to potassium citrate. In the other case (Case III) the pyelitis had been present before labour and had not responded to potassium citrate nor hexamine. In the three cases reported the diagnosis of puerperal septicæmia had been made on clinical grounds alone, laboratory tests had not been practicable. In one other case in which the drug was given, the result had been very satisfactory, there being immediate response to the first intravenous injection. Unfortunately the full notes were not obtainable.

CASE I.—Mrs. D., aged twenty-six, a *primigravida*, had been delivered with forceps and on the fourth day of the puerperium had had an elevated temperature and pulse rate. Antistreptococcal serum, sixty cubic centimetres, had been administered with an apparently good result. In the succeeding days her condition had gradually become worse and had been aggravated by diarrhoea. She had looked very toxic by the ninth day, the temperature being 39.4° C. (103° F.) and the pulse rate 130. She had been given quinine bihydrochloride intramuscularly every day for two days and then an intravenous injection had been given, after that five intramuscular injections had been used. From the date of the first injection she had immediately improved in every respect, the immediate improvement in her general condition and facial appearance being most striking. This was the first case in which quinine bihydrochloride had been given by him and the apparent benefit derived therefrom was an incentive to use the drug in other cases.

CASE II.—Mrs. F.D. had had a normal labour and thirty-six hours later she had had a severe rigor, the temperature being 40° C. (104° F.) and the pulse rate 140. An intravenous injection of quinine bihydrochloride had been given and within twelve hours the temperature had fallen to 38.3° C. (101° F.), but had become elevated again on the fourth day. Further injections had been given, two being intramuscular and one intravenous and after each injection there had occurred a fall in temperature and pulse rate. The intramuscular injections had been continued until the twelfth day. At this stage the urine had been noticed to be offensive and a pyobacilluria had been found. The urine had been examined microscopically on three previous occasions without any abnormality being found. Treatment with potassium citrate had been given with rapid improvement in the urinary condition. A painless abscess had subsequently developed at the site of one of the intramuscular injections.

CASE III.—Mrs. McC., a *primigravida*, had been confined on May 30, 1928, forceps had been used and a perineal tear had occurred. There had been *ante partum* pyelitis which had continued *post partum*. On the fifth day of the puerperium the temperature had become elevated to 40.4° C. (104.8° F.), the pulse rate had been 120. Antistreptococcal serum had been given in two doses of ten cubic centimetres each and the temperature had fallen and had

swung between 40° and 37.8° C. (104° and 100° F.). On the ninth day she had been definitely worse, the abdomen had been distended and there had been an increased respiratory rate and she had had a definitely toxic appearance. The abdominal distension had been relieved by an enema, one cubic centimetre of pituitrin and a turpentine stupe. Quinine bihydrochloride had been given intravenously and the result had been alarming in that the temperature had fallen rapidly within twelve hours to 36.7° C. (98° F.) and the patient had looked and felt much better. On the next day an intramuscular injection had been given and on this occasion the temperature had fallen from 36.8° to 35.7° C. (98.2° to 96.2° F.) and the patient had collapsed but had responded to stimulants. After the second injection the temperature and pulse had not risen above normal. She had been treated with potassium citrate throughout and after the injections were stopped, the urine had still contained pus and bacilli in great quantities. This condition had been considered to be one of pyobacilluria and septicæmia.

Torsion of the Umbilical Cord.

Dr. Dale also reported a case of torsion of the umbilical cord. A full report of this case will be published in a subsequent issue.

Acidosis in Childhood.

Dr. T. G. OLIPHANT read a paper entitled: "Acidosis in Childhood" (see page 216).

Dr. F. KINGSLEY NORRIS congratulated Dr. Oliphant on his interesting paper. The literature on this subject left them unsatisfied and confused mainly because of the loose usage of terms. The term acidosis should surely be reserved for that state in which the acid base balance of the blood was shifted to the acid side, a rare but real condition. Ketosis on the other hand might be defined as a state in which acetone and diacetic acid appeared in the blood in abnormal quantities. Such was the body's intolerance to any interference with its normal acid base balance and such was the perfection of the mechanism of its maintenance, that Brown and Graham in an investigation of a series of severe ketoses had failed to demonstrate any departure from the normal 7.45 pH figure of blood. Evidently acidosis and ketosis were not interchangeable terms. Kussmaul and others by experimental administration of ketone bodies had been able to produce varying degrees of depression of the central nervous system, but not emesis. A routine examination of the urine of children admitted to hospital revealed the presence of acetonuria in nearly 60% of cases and yet vomiting was not a prominent feature. Infection or starvation was almost invariably associated with ketosis in children. Again vomiting was not a noticeable feature in these children. In the most severe form of ketosis diabetic coma vomiting was absent. Vomiting was not a symptom of a ketosis or an acidosis. The confusion had arisen because, while they were sometimes associated, cyclic vomiting, ketosis and acidosis were three quite different conditions and not interchangeable terms.

Dr. Norris briefly reviewed the notes of forty cases of recurrent or cyclic vomiting. The patients were all "top-gear" children of the lean type. There were twice as many girls as boys, the average age at consultation had been just over six years. More than half of the victims were the only child. Of the children 50% had been artificially fed within a few weeks of birth and the majority of the others had been kept on the breast for an abnormally long period, both conditions which predisposed to later nutritional disorders. Nearly all these children had suffered from constipation and periodical attacks of abdominal pain. With most of the children there was some premonition of the disturbance. Some became ravenous in their appetite, others had a short period of peevishness, a few were particularly well when suddenly, generally at night, they began to vomit and continued to vomit, not even water was retained. The temperature was as a rule raised, sometimes abdominal pain was pronounced, acetone appeared in the breath and generally in the urine. Acetone was a very volatile product and the absence of acetonuria did not preclude a ketosis. From the almost invariable response to a low fat diet it would seem that these cases were associated with some disorder of fat

metabolism. Just as a gouty patient could not contemplate a meal of purins, neither could these small patients adequately deal with fats. But it was not the resultant ketone bodies that produced the characteristic feature of the condition, the vomiting. Something so far unrecognized was elaborated in addition. The vomiting and the resulting starvation could account for a large portion of the ketone bodies present. These children would appear to live a smouldering existence. Fatigue, excitement, infection or some dietetic indiscretion would supply the match which caused the flare; but these attacks which tended to recur, could be prevented or minimized by a rigid dietetic régime. Butter and cream should be excluded for a period of at least three months, skimmed milk was advisable in severe cases. Joseph's work indicated that these children suffered from a mild degree of hypoglycæmia in the quiescent stages, so carbohydrates and proteins could be pushed. Constipation was rigidly avoided, a mixture of powdered rhubarb and potassium bicarbonate was given for some months. Any septic focus should receive attention, but Dr. Norris deprecated indiscriminate appendicectomy. During an attack an enema was the most effective method of speedily emptying the bowels. Barley sugar and sips of sweetened, carefully strained orange juice were as a rule retained and together with four tablespoon doses of milk of magnesia every hour were all that should be given for twelve of twenty-four hours. When nothing could be retained, a continual rectal drip of a 5% solution of glucose in saline solution was helpful. After an hour of this administration five units of "Insulin" were given. Intraperitoneal saline solution was indicated in the presence of extreme dehydration.

Dr. A. P. DERHAM referred to an article by Cornell in the *Archives of Pediatrics*, February, 1925, in which the treatment of cyclic vomiting was discussed, and the administration of small increasing amounts of iced, strained orange juice was recommended. Dr. Derham had tried this method successfully in some instances which had seemed to fall into this group, but he pointed out that the diagnosis of acidosis or cyclic vomiting was often made incorrectly when the recurring illness was actually due to the exacerbations of a chronic infection such as pyelitis, otitis media, tonsillitis et cetera.

He had also seen several patients in whom the metabolic upset seemed to depend on a recurring intolerance for some article of diet such as egg or nuts and in this seemed to resemble the asthmatic or anaphylactic phenomena. In at least two cases in older children recurring headache, vomiting and malaise had been associated with migrainous symptoms and the correction of an astigmatic fault had led to the partial or complete cessation of the attacks.

Lastly, it should be remembered that recurring upsets closely simulating the condition under discussion were sometimes dependent on purely psychological causes. School worries, fear of examinations and the anxious attention of too solicitous parents could all contribute to the production of a condition of nervous tension which found its expression in vomiting attacks. These could be alarmingly severe and could be prevented entirely by removing the underlying psychological cause. One such child, a girl of ten, had been completely cured by being sent to a school where no examinations were held.

Dr. GUY SPRINGTHORPE said that some reference to the alterations of acid base equilibrium associated with these clinical conditions might be helpful. He agreed with Dr. Norris that acidosis should be defined as that condition in which the blood reaction was more acid than the normal for the particular individual; similarly that alkalosis was that in which the reaction was more alkaline. Based on J. B. S. Haldane's classification, these two conditions might be each subdivided into two main types, the first form of acidosis being due to bicarbonate deficit in the body fluids from excess non-gaseous acid formation. This was much the commoner type and might be seen clinically in diabetic coma, cyclical vomiting, starvation, gastro-enteritis in infants, dysentery in older children, uræmia and salicylate poisoning. The second form was due to carbon dioxide excess, mostly the result of respiratory insufficiency, and was seen in some cases of bronchopneumonia with cyanosis, morphine poisoning and other cardio-respiratory disorders. Either of these two alterations might eventually

be compensated for by the combined excretory activities of the lungs and kidneys or might remain uncompensated—a persistent acidosis. In the same way alkalosis might result: first, from bicarbonate excess, as seen with high intestinal obstruction, where owing to the persistent vomiting large quantities of acid were lost, or sometimes following the administration of alkalis, particularly if the kidney function was defective or in patients with latent tetany. Secondly, it might occur owing to carbon dioxide deficit which occurred in anoxic states such as severe lobar pneumonia and rapid ascent to high altitudes. The resultant hyperpnea "washed out" carbon dioxide from the lungs in excessive amounts.

Reverting to the type caused by excessive non-gaseous acid formation, into this group, as mentioned, fell cases of diabetic coma and cyclical vomiting, the acids produced being ketone bodies and the resultant condition one of ketosis. This ketosis could only result when fatty acids were incompletely combusted owing to a deficiency of suitable glucose or more picturesquely, "fat burned only in the fires of the carbohydrates." In the majority of instances in which this occurred the excess acid produced was rapidly compensated for and no permanent state of acidosis, recognizable clinically or biochemically, could be said to exist. Consequently ketosis, especially as met with in sick children, was more often than not of little significance. For example, Frew had found over 60% of 600 children had ketone bodies in the urine on the day of admission to Great Ormond Street Hospital and similar observations had been made on consecutive admissions at Glasgow. It was thought that this resulted from a combination of anorexia, infection and fever. Children on high ketogenic diets, as in the treatment of epilepsy, developed definite ketosis without any clinical symptoms, acidotic or otherwise. It should perhaps be stated for a better understanding of the possible symptoms of such conditions that in addition to effects due to any persistent excess acid accumulation, the aceto-acetic acid formed was itself a toxic substance and was held responsible for many of the symptoms of diabetic coma, oxybutyric acid and acetone being less poisonous.

Of the clinical types with non-diabetic ketosis which Dr. Oliphant had fully described, the outstanding example was cyclical vomiting. Genuine cases with definite periodicity must be rare; but after suspected cases ultimately found to be due to appendicitis, migraine, volvulus, diaphragmatic hernia, enterospasm and the like, had been eliminated, a number remained. At the height of their illness the patients probably verged on acidosis, if at times they did not actually develop it. Those that had been investigated biochemically, however, have shown little, if any, more evidence of such than the patients on high ketogenic diet. It was possible that larger amounts of aceto-acetic acid were formed and produced the more severe nervous symptoms. There was the much commoner condition, so called "bilious attacks." Many of these had been studied both during and in between bouts without much in the way of metabolic abnormality being discovered. There was no generally accepted evidence of defective carbohydrate metabolism, though transient hypoglycæmia was reported by some observers. At most these "susceptible" children had shown an increased tendency to production of ketone bodies on fatty diets, which Schloss suggested might be due to a deficiency of fat storage ability. Considering both these clinical types from the point of view of their acid base equilibrium, it would seem that whilst in the severe cases some of the nervous symptoms might be due to the presence of ketone acids, the other symptoms, of which vomiting was the chief, resulted from some more obscure disturbance of which the ketosis was a result rather than a cause.

Dr. JEAN MACNAMARA expressed her appreciation of the paper and remarked on the common tendency to classify conditions loosely as acidosis and treat them symptomatically. Children on moderate doses of sodium salicylate sometimes exhibited symptoms resembling acidosis, becoming more thirsty, restless and anxious, with cherry red lips. Several such cases had occurred recently at the Children's Hospital, even though sodium bicarbonate had been administered and one of these had proved fatal. An intravenous transfusion of glucose could be left till too

late and an intravenous transfusion of whole blood in some instances would restore the patient sufficiently for the glucose to be administered successfully.

Dr. FRANK APPERLY said that ketosis did not necessarily imply acidosis, as the former could occur in a condition even of alkalosis, as sometimes happened when Sippey's diet was overdone.

Dr. LESLIE HURLEY said that increase in the hydrogen ion content of the blood or tissues did not occur until the patient was almost moribund. It was necessary to define the terms used. He disagreed with Dr. Norris's statement that acidosis did not cause vomiting. The first observations on the subject had been made by injecting experimental animals with hydrochloric acid. The administration of sodium salicylate without sodium bicarbonate had led to fatal results in two cases in his experience. Patients in whom acetone appeared in the urine, could be divided roughly into three categories, first, 50% of children admitted to hospital with feverish conditions had acetone in their urine, second, there was much acetone in the urine of patients dying of uræmia or any severe liver disease and, thirdly, the patients suffering from the conditions already discussed by previous speakers could be included as well as diabetic, post-anæsthetic and salicylic acid acidosis.

Dr. Oliphant in reply thanked members for their remarks and was very interested in what Dr. Norris had to say. He was glad to hear that Dr. Norris had a leaning towards "Insulin" in the treatment of this condition and as he (Dr. Oliphant) had had only one experience of its use, he would use it again if the occasion arose, but felt certain it was necessary to make sure that sufficient glucose was administered beforehand.

Opportunities to do *post mortem* examinations in these cases were very rare and little was known of the pathology of the condition. It was possible that a spoiling of the liver cells occurred and that this was an essential part of the condition. They knew that the efficiency of the liver was essential in the giving of arsenical preparations. They also knew that glucose given beforehand helped to minimize their toxic effect.

Obstetrical Observations.

Dr. NORMAN DALE read a paper entitled: "Obstetrical Observations" (see page 219).

Dr. A. N. McARTHUR said that they were greatly indebted to Dr. Dale for stepping into the breach created by Dr. Holmes's absence.

Dr. McARTHUR agreed with Dr. Dale's views on marginal *placenta previa*. In central *placenta previa* the removal of the placenta was attended with great danger to a living child. He always advocated Cæsarean section in central *placenta previa*, but condemned routine Cæsarean section in order to avoid labour pains. Referring to Dr. Dale's case of panhysterectomy in a case of local sepsis, Dr. McARTHUR said that the result had been remarkably good and indicated good judgement in deciding on operation and in carrying it out. The operation could not have been successful if septicæmia had already occurred. With regard to the immediate repair of the torn perineum, 75% of the routine work of gynecology was in remedying the results of the failure to repair torn perineums immediately. It could truthfully be said to sow tares in other men's fields. Dr. McARTHUR advocated a wide suturing of muscle rather than skin. He considered Dr. Dale's paper sound and interesting.

Dr. F. E. LITTLEWOOD supported Dr. Dale in advocating immediate suture of torn perineums. For many years he had performed episiotomy in cases of threatened perineal rupture. He had found that routine bilateral episiotomy was an excellent procedure and in such cases, with forceps properly applied, the perineum should not be torn.

Dr. BUZZARD said that he also used episiotomy and found hot packs to the perineum helpful in avoiding rupture.

Dr. K. A. STEPHENSON said that in cases of prolapse of the cord in posterior positions of the vertex he used bimanual rotation of the head either at the brim or lower down on the perineum, with the assistance of a nurse.

Dr. GEORGE SIMPSON said that he had found Buist's pads and binder useful as a method of rotating posterior

positions. A vertical pad of cylindrical shape was placed on the maternal abdominal wall against the fetal back and a flat rectangular pad on the opposite side in the region of the lower limbs of the fetus and a firm binder applied overall. The kicking of the fetus against the second pad tended to rotate its spine anteriorly and this tendency was assisted and maintained by the vertical pad on the opposite side.

Regarding the induction of labour by quinine, at the Queen Charlotte Hospital, London, it was much used and its efficiency increased as the fetuses approached term. If this failed, a bougie was tried. At the Rotunda Hospital, Dublin, the bougie was usually resorted to first. He considered the use of a stomach tube as a bougie was dangerous on account of the possibility of air embolus.

Dr. Simpson also considered the use of routine episiotomy of doubtful value, as it was impossible to foretell in what cases the perineum was undoubtedly going to rupture.

At the Queen Charlotte Hospital the routine induction by the quinine method was to give a dose of castor oil and an hour later 0.6 gramme (ten grains) of quinine sulphate by mouth. After waiting another hour a hot enema was given followed by the application of a tight binder and if necessary a further dose of quinine, 0.6 gramme, was given an hour later. This treatment was repeated after twenty-four and forty-eight hours.

Dr. Simpson said that in manual rotation of the head in posterior vertex presentations it might be necessary to push the head above the pelvic brim and it was best to twist the child's shoulder with the index and middle fingers of the rotating hand at the same time as the head.

In reply Dr. Dale said that in his hands Buist's pads had proved most successful in cases with a lax abdominal wall, little *liquor amnii* and a small fetus, but the method failed in some cases. In his opinion the patency of the stomach tube, when used as a bougie, allowed a free passage of blood in the event of striking the placenta and this advantage more than counterbalanced the danger of air embolus.

Proceedings of the Australian Medical Boards.

NEW SOUTH WALES.

THE undermentioned have been registered under the provisions of *The Medical Act, 1912 and 1915*, of New South Wales, as duly qualified medical practitioners:

- Jelbart, Charles Ellis, M.B., B.S., 1916 (Univ. Melbourne), Henty.
- Myers, Leslie, L.R.C.P. (Edinburgh), 1928, L.R.C.S. (Edinburgh), 1928, L.R.F.P.S. (Glasgow), 1928; 11, Tusculum Street, Potts Point.
- O'Connor, John Mackey, M.B., B.S., 1929 (Univ. Melbourne), Lewisham Hospital.
- Reeves, Thomas Conrad, M.R.C.S. (England), 1911; L.R.C.P. (London), 1911; Burren Junction.
- Rothstadt, Margarita Charlotte, M.B., B.S., 1926 (Univ. Melbourne), Culcairn.
- Sullivan, Charles, M.B., B.S., 1926 (Univ. Melbourne), c.o. A.M.P. Society, Sydney.
- Thomson, Alastair Crawford, M.B., Ch.B., 1927 (Univ. Glasgow), S.S. Manunda.

For additional registration:

- Macquean, Frederic Lindsay, Ch.M., 1929 (Univ. Sydney).
- Moran, Herbert Michael, Ch.M., 1929 (Univ. Sydney).

TASMANIA.

THE undermentioned have been registered under the provisions of *The Medical Act, 1918*, of Tasmania, as duly qualified medical practitioners:

- Jago, George Cornwall, M.B., B.S., 1925 (Univ. Melbourne), New Norfolk.

Richards, Reginald Ernest, M.B., B.S., 1922 (Univ. Melbourne), Launceston.
 Rowe, Cecil Hartley, L.R.C.S., L.R.C.P. (Edinburgh), L.F.P.S. (Glasgow), New Norfolk.

Books Received.

HEALTH, DISEASE AND INTEGRATION: AN ESSAY BASED ON A STUDY OF CERTAIN ASPECTS OF ENCEPHALITIS LETHARGICA, by H. P. Newsholme, M.A., M.D., F.R.C.P., B.Sc., D.P.H.; 1929. London: George Allen and Unwin, Limited. Demy 8vo., pp. 327. Price: 12s. 6d. net.

MENTAL DEFICIENCY (AMENTIA), by A. F. Tredgold, M.D. (Durham), F.R.C.P. (London), F.R.S. (Edinburgh); Fifth Edition; 1929. London: Baillière, Tindall and Cox. Demy 8vo., pp. 651, with illustrations. Price: 25s. net.

CANCER: A PRACTICAL RESUME OF THE SUBJECT FOR GENERAL PRACTITIONERS, by G. Jeanneney; Translated by John Gibson, M.C., M.A., M.D., and John H. Watson, M.B., B.S., F.R.C.S.; 1929. London: H. K. Lewis and Company, Limited. Crown 8vo., pp. 200, with illustrations. Price: 7s. 6d. net.

THE PHYSICS OF X-RAY THERAPY, by W. V. Mayneord, M.Sc.; 1929. London: J. and A. Churchill. Post 8vo., pp. 185, with illustrations. Price: 10s. 6d. net.

Diary for the Month.

AUG. 20.—Tasmanian Branch, B.M.A.: Council.
 AUG. 20.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
 AUG. 20.—New South Wales Branch, B.M.A.: Organization and Science Committee.
 AUG. 23.—Queensland Branch, B.M.A.: Council.
 AUG. 27.—New South Wales Branch, B.M.A.: Medical Politics Committee.
 AUG. 27.—Illawarra Suburbs Medical Association, New South Wales.
 AUG. 28.—Victorian Branch, B.M.A.: Council.
 AUG. 29.—New South Wales Branch, B.M.A.: Branch.
 AUG. 21.—Western Australian Branch, B.M.A.: Branch.
 AUG. 21.—Section of Obstetrics and Gynecology, New South Wales Branch, B.M.A.:
 AUG. 29.—South Australian Branch, B.M.A.: Branch.
 AUG. 30.—Central Southern Medical Association, New South Wales.

Medical Appointments.

Dr. Thomas Grenville Clarence Retallick (B.M.A.) has been appointed Acting Medical Superintendent of the Hospital for the Insane, Beechworth, Victoria.

Dr. M. J. Gallagher (B.M.A.) has been appointed Quarantine Officer, Mackay, Queensland.

Dr. R. E. Richards (B.M.A.) has been appointed Acting Chief Quarantine Officer (General), Tasmania.

Dr. Albert J. W. Ahern (B.M.A.) has been appointed Public Vaccinator at Hughesdale, Victoria.

Dr. William H. Steel (B.M.A.) has been appointed Public Vaccinator at Preston, Victoria.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser," page xviii.

GIPPSLAND HOSPITAL, SALE, VICTORIA: Resident Medical Officer.

WESTERN AUSTRALIAN PUBLIC SERVICE: Junior Assistant Resident Medical Officer.

THE PUBLIC SERVICE BOARD, NEW SOUTH WALES: Medical Officer (male).

Medical Appointments: Important Notice.

MEDICAL practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

BRANCH.	APPOINTMENTS.
NEW SOUTH WALES: Honorary Secretary, 21, Elizabeth Street, Sydney.	Australian Natives' Association. Ashfield and District United Friendly Societies' Dispensary. Balmain United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham United Friendly Societies' Dispensary. Manchester Unity Medical and Dispensing Institute, Oxford Street, Sydney. North Sydney Friendly Societies' Dispensary Limited. People's Prudential Assurance Company Limited. Phoenix Mutual Provident Society.
VICTORIAN: Honorary Secretary, Medical Society Hall, East Melbourne.	All Institutes or Medical Dispensaries. Australian Prudential Association Proprietary, Limited. Mutual National Provident Club. National Provident Association. Hospital or other appointments outside Victoria.
QUEENSLAND: Honorary Secretary, B.M.A. Building, Adelaide Street, Brisbane.	Members accepting appointments as medical officers of country hospitals in Queensland are advised to submit a copy of their agreement to the Council before signing. Brisbane United Friendly Society Institute. Stannary Hills Hospital. Toowoomba Friendly Societies Medical Institute.
SOUTH AUSTRALIAN: Secretary, 207, North Terrace, Adelaide.	All Contract Practice Appointments in South Australia. Booleroo Centre Medical Club.
WESTERN AUSTRALIAN: Honorary Secretary, 65, Saint George's Terrace, Perth.	All Contract Practice Appointments in Western Australia.
NEW ZEALAND (WELLINGTON DIVISION): Honorary Secretary, Wellington.	Friendly Society Lodges, Wellington, New Zealand.

Medical practitioners are requested not to apply for appointments to positions at the Hobart General Hospital, Tasmania, without first having communicated with the Editor of THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, New South Wales.

Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

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